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# The Relationship between School Climate and Graduation Rates from a Control Perspective: Comparing Georgia Public High Schools

Nathan Hand  
[nhand1@students.kennesaw.edu](mailto:nhand1@students.kennesaw.edu)

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The Relationship between School Climate and Graduation Rates from a Control Perspective:

Comparing Georgia Public High Schools

Research Dissertation submitted by

Nathan W. J. Hand

Kennesaw State University

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Dissertation Committee:

Dr. David G. Buckman, Chair

Dr. Albert Jimenez, Committee Member

Dr. Arvin Johnson, Committee Member

## **Dedication**

This dissertation is dedicated to my family. To my amazing, Tania, thank you for always supporting my goals and putting up with this, sometimes irrational, guy. Thank you for giving me the late nights and long weekends to work through this educational journey. To our incredible children, Cael and Hayden, thank you for understanding that to achieve your goals in life, you must be willing to put in the time and sacrifice. Nothing has been more difficult in my life than spending time away from you. To my mother, your love and encouragement have made me the man I am today. Because of you, I have conviction. To my brother, you are my best friend. Thank you for always putting up with your little bro. Lastly, to my father, I dedicate this accomplishment to you and hope to have made you proud. I love you, my family.

## **Acknowledgements**

I must thank my mentor and dissertation chair, David G. Buckman, for his unwavering commitment to hold me accountable and push me through this educational process. Without your dedication, guidance and the time you have given, I'd still be staring at a blank paper. Your insight and ability to pass along knowledge have been invaluable to me throughout this journey. I hope this piece of work has met your expectation.

To Chris Small, my co-worker, classmate, and friend, thank you for sharing the long drives, long weekends, and stress. Without you, it would have been easy to give up on this difficult task. I appreciate your partnership more than you will ever know. I am excited for the both of us to finish this marathon.

## **Abstract**

The purpose of this study was to contribute to the body of literature regarding decisions school leaders make when developing strategic plans to improve student outcomes. This study investigated whether there is a significant relationship between the school's climate and graduation rates for public high schools in the state of Georgia when controlling for potential covariates. Like most states, Georgia legislatures have increasingly placed more responsibilities on schools to graduate students on time. For this study, "on time" refers to students who graduate within a four-year cohort, beginning when students enter the ninth grade. Research over the last decade suggests attention should be given to alternative aspects of the school experience, including the quality of instruction, interpersonal relationships, school safety, and structural features within the school building that may increase positive student outcomes (Ali & Siddiqui, 2016; Eller & Eller, 2009; La Salle, 2013; Wang & Degol, 2016).

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# SCHOOL CLIMATE AND GRADUATION RATES

The Relationship between School Climate and Graduation Rates from a Control Perspective:

Comparing Georgia Public High Schools

## Chapter One

The purpose of this chapter is to provide a brief introduction to the issue of students failing to graduate from high school and the societal impact that is encountered as a result. This chapter also considers the school's climate and the role it plays on a student's decision to graduate. Also included in this chapter is a statement of the problem, the purpose of the study, research question, hypothesis, assumptions and justification for the research, and definitions.

Like many other state departments of education, Georgia has historically concentrated educational reform on curriculum-based changes aimed at improving student outcomes potentially without consideration to alternative factors that may influence results such as school climate (Moyer, Cai, Wang, & Nie, 2011). However, research over the last decade suggests an equal amount of attention should be given to other aspects of the school experience, including the quality of instruction, interpersonal relationships, school safety, and structural features within the school building that increase positive student outcomes (Ali & Siddiqui, 2016; Eller & Eller, 2009; La Salle, 2013; Wang & Degol, 2016). These researchers emphasize the need to understand and explore the school climate because of its established relationships to academic achievement, behavior, and other positive outcomes for students (Anderson, 1982).

Every high school in America is challenged to overcome variables that contribute to a student's decision to drop out of school. Research indicates a number of these contributing variables that go beyond the reach of school leaders. These variables include: a) individual student cognition (Bowers, Spratt, & Taff, 2013; National Center for Education Statistics, 1992), b) family socioeconomic status (Coalition for Juvenile Justice, 2001; Hammond, Linton, Smink,

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& Drew, 2007; Kaufman, 2002), c) individual student emotional and learning disabilities (Suh & Suh, 2007), d) student race/ethnicity (Battin-Pearson, Newcomb, Abbott, Hill, Catalano & Hawkins, 2000; Griffin, 2002; National Center for Education Statistics, 1992), e) student immigration and limited English proficiencies (Sheng, Sheng, & Anderson, 2011; Smink & Schargel 2004), f) family structure and educational level (Woods, 1995), g) location (National Center for Education Statistics, 1992; Smink & Schargel 2004), h) community crime rate (Alspaugh, 1998; Wilson, 1996), and i) community unemployment rate (Christle, Jolivette, & Nelson, 2007; Wilson, 1996).

This study intended to determine if the climate and culture of public high schools in Georgia statistically relate to their graduation rates. The outcome of this study was important because research suggests that out of all the variables influencing a student's decision to remain in school, the climate is the one variable that can be influenced by school leaders (Waters, Marzano, & McNulty, 2004). If a school's climate is measured and statistically correlates with its graduation rate, Georgia high school leaders may consider and emphasize innovative ways to shape and influence their environments by including climate initiatives in their school improvement plans.

It is important to understand the meaning of climate and culture, and how they coincide with each other. While educational researchers make distinctions between school climate and culture, they also explain that climate is embedded in the culture. Eller and Eller (2009) describe school climate as the everyday feel within the school while culture is rooted as the foundation. Hoy (1990) expresses that climate is viewed as the behavior, while culture is comprised of the norms of the school. Consequently, the culture of the school creates the climate. Communicated differently, the climate is the "how," while the culture is the "why."

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“How” school leaders, teachers, students, parents, and other members of the community feel about their school is climate; “Why” they feel the way they do is determined by the cultural values and beliefs of those within the school (Stover, 2005). In this respect, school climate (i.e., the way people feel about their school) is dependent on the values and behaviors of those in the school (i.e., culture). Therefore, school climate is defined by the stakeholder’s perceived beliefs about their respective school in reference to the quality and character of school life, influenced by the norms, goals, values, interpersonal relationships, instructional practices, and organizational structures within the school (Smith, 2018).

### **Background**

The concept that improving a school’s climate will contribute to the development of its success is not new. In the early 20th century, Perry (1908) stressed the importance of order, industry, and school culture as key influencers when determining a school’s ability to succeed. In 1935, Lewin theorized that the behavior of a person was dependent upon the individual and the environment (Hall & Lewin, 1936). The formula developed by Lewin to highlight the interaction between the behavior (b) and function (f) of the person (P) and environment (E) was  $b = f(P, E)$ .

From a historical perspective, the importance and necessity to graduate from high school have changed dramatically over the span of a hundred years. The graduation rate in 1900 was approximately a meager 6.4%, according to Fine (1991). In our current society, graduating from high school is imperative not only for the individual, but the country as a whole regarding the economy. The Alliance for Excellent Education (2018) estimates that one in five students decides to drop out of school every year. That equates to approximately 750,000 students that walk away from education before completing high school. According to the same report, out of

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approximately 4,439,300 students in American high schools, 83.2% will successfully graduate within a four-year cohort. An additional report from the same alliance estimated that the average high school graduate coming out of high school stands to earn approximately \$10,000 a year more than an individual who did not complete high school.

Statistical research spanning two decades indicates that students who drop out of school are more likely to experience greater health problems, engage in criminal activity, and become dependent on welfare and other government programs (Hayes, Nelson, Tabin, Pearson, & Worthy, 2002; Lunenburg, 1999; Martin, Tobin, & Sugai, 2002; Stanard, 2003). Backing this research, Standard (2003) reported that dropouts comprise 52% of welfare recipients, 82% of the prison population, and 85% of the juvenile justice system. Also, the adverse impact that dropouts have on the country's economy as a whole is overwhelming. Hayes et al. (2002) found that failing to graduate from high school negatively impacts the national income, forgone tax revenue supporting government services, increased demand for social services, increased crime and antisocial behavior, and reduced political participation. Further, Lunenburg (1999) found that the cost of high school dropouts to the United States is approximately \$250 billion in social services, lost wages, and taxes.

According to the Alliance for Excellent Education (2018), if the United States increased its graduation rate from 83% to 90%, the result would be an estimated 3,939,300 of total high school graduates, an increase of 250,000 annually. It is also estimated that these new graduates would earn 3.1 billion dollars annually in additional income and generate 5.7 billion dollars in economic growth for the country. Specific to Georgia, the Alliance for Excellent Education (2018) estimates that increasing the state's current graduation rate from 78% to 90% could result in the creation of 750 new jobs, 10.5 million dollars in state and local tax revenue, 260 million

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dollars in home sales, and 120 million in spending. Also, the alliance predicts an increase of 24.9 million dollars in Federal tax revenue, 600 million dollars savings on health care, and 160 million dollars in earnings

### **Quantitative Research Question and Null Hypothesis:**

The purpose of this study was to determine whether there was a statistically significant relationship between school climate and graduation rates for public high schools in the state of Georgia. Also, this study sought to determine if there was a significant variance between school climate and other relevant variables that impact high school graduation rates. The research question and null hypothesis below guided this study:

1. Is there a relationship between school climate and graduation rates for public high schools in the state of Georgia when potential covariates have been controlled?

H<sub>0</sub>: There is no significant relationship between public high school climate ratings (independent) and graduation rates (dependent) in the state of Georgia when potential covariates have been controlled.

### **Statistical Methods**

For the previously mentioned research question and respective null hypothesis, a specific procedure was utilized to determine whether the null hypothesis could be accepted or rejected.

To determine the variance in school climate, data obtained in this study was analyzed via an ordinary least squares (OLS) multiple regression procedure using a simultaneous order of entry for variables. The dependent variable was Georgia public high school four-year cohort graduation rates calculated using a formula developed by the Georgia Department of Education.

The control variables served as covariates adjusting for variance associated with graduation rates but purportedly confounding the test of the hypothesis set forth for empirical

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tests in this study. This study recognized the following potential covariates (i.e., relevant confounding variables that impact high school graduation rates): a) student achievement in ELA and math, b) school level socioeconomic status, c) school size, d) student race/ethnicity percentages, e) school English language learner population, f) school special education population, g) school location, h) community crime rate, and i) community unemployment rate. A simultaneous order of entry was used within the regression equation having an alpha for inclusion being .05 to assess the viability of these potential covariates.

### Definitions

1. Academic Climate – the way in which learning and teaching are promoted in the school (Thapa, Cohen, Guffey, and Higgins-D'Alessandro, 2013).
2. Community (Relationships) – the quality of interaction and partnerships between the members of the school, families, and other stakeholders (Epstein, Sanders, Sheldon, Simon, & Salinas, 1997).
3. Connectedness – an individual's feelings about the school, a sense of belonging at the school, positive relationships between teachers and peer groups, and active engagement in school activities (Thompson, Iachan, Overpeck, Ross, & Gross, 2006).
4. Crime Rate – calculated by dividing the number of reported crimes by the total population (Georgia Bureau of Investigation, 2018).
5. Dropout – a student that withdraws from school before completing all requirements for graduation.
6. Ecological Systems Theory – explains why individuals behave differently when comparing their behavior in the presence of their family as well as their behaviors when they are in a school or work environment (Bronfenbrenner, 1979).

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7. Emotional Safety – the degree in which schools provide a caring and supportive staff, have counseling services available for students who are struggling with emotional depression, and forbid verbal bullying or harassment (Kuperminc, Leadbeater, & Blatt, 2001).
8. English Language Learners (ELL) and English for Speakers of Other Languages (ESOL) – Students whose first language is not English.
9. Graduation Rate – calculated by taking the number of students who graduate in four years with a regular high school diploma divided by the number of students who form the adjusted cohort for the graduating class (Georgia Department of Education, 2018).
10. Institutional Environment – the adequacy of the school setting, the maintenance, and infrastructure of the building, and the accessibility and allocation of educational resources (Wang & Degol, 2016).
11. Interpersonal Relationships - the consistency, frequency, and nature of the relationships that exist within the school. These relationships include teacher-student, teacher-teacher, student-student, and other members of the school such as administration and support staff (Barth, 2006; Crosnoe, Cavanagh, & Elder, 2003).
12. Norms – shared beliefs regarding the appropriate forms of behavior and expectations for members of a particular social system or school (Brookover et al., 1978).
13. Order and Discipline – the degree to which students subscribe to the rules and policies of the school, the consistency and fairness of the rules and policies, and the manner in which acts of incivility or insubordination are handled (Wang and Degol, 2016).

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14. Physical Safety – the degree in which violent behavior, aggression, and harassment exist and what measures are implemented to ensure the safety of its members (Devine & Cohen, 2007; Wilson, 2004).
15. Professional Development – opportunities and programs provided to teachers that foster and develop instructional strategies and student learning (Klein & Riordan, 2009).
16. School Climate – the stakeholder’s perceived belief about their respective school in reference to the quality and character of school life, influenced by the norms, goals, values, interpersonal relationships, instructional practices, and organizational structures within the school ("Our Approach - National School Climate Center," 2018).
17. School Culture – set of values, beliefs, ideas, customs and behavioral norms shared by members of a group which develops the identity of the school (Vargas, Nastasi, Moore, and Jayasena, 2005).
18. Self-efficacy – one’s belief and understanding of what abilities they can offer within the group (Ormrod, 1999).
19. Social Capital Theory – the accumulation of actual or potential resources which are linked to durable networks of institutionalized relationships of common threads; characteristics of social organizations such as trust, norms, and networks, which can improve the efficiency of society by facilitating cooperative actions (Bourdieu, 1986; Coleman, 1988).
20. Social Cognitive Theory – suggests a reciprocating relationship between the environment, an individual’s behavior, and cognition all work simultaneously to influence what is observed (Bandura, 1986).



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21. Social Learning Theory – explains that people learn from one another through observation, imitation, and modeling (Bandura, 1977).
22. Socio-economic status (SES) – calculated by dividing the number of students eligible to receive free or reduced meals (reported annually by the Georgia Department of Education in the October Nutrition Count) by the total school enrollment count (United States Department of Agriculture, 2017).
23. Star Climate Rating – a school's climate rating in Georgia that considers student, parent, and personnel surveys, student discipline data, safe learning environment (embedded in the surveys), and school-wide attendance record ("School Climate," 2018).
24. Transformational Leadership – leadership that communicates the school's vision to all stakeholders, motivates others to work toward a common goal, shows respect for all members of the group, and expresses empathy for individual feelings and needs (Grayson & Alvarez, 2008; Leithwood & Riehl, 2003).
25. Unemployment Rate – determined by the number of unemployed persons divided by the workforce in an identified area (Georgia Department of Labor, 2018).

## **Chapter II**

### **Literature Review**

The purpose of this chapter is to review literature related to school climate and culture, and its connection to school achievement, particularly demonstrated by high school graduation rates. The chapter begins by examining the literature related to school climate and culture, dating back to the early 1900's, and the influence the environment has on the individual student and success of the school. The next section of this chapter reviews issues that cause students to drop out of school and the impact it has on the community and society. The final section of this chapter will examine theoretical frameworks associated with school climate and culture, beginning with a discussion of Bronfenbrenner's Ecological Systems Theory and why individuals behave differentially according to the environment in which they are exposed. Bandura's Social Learning Theory is introduced to explain how individuals learn behaviors from each other. Completing the theoretical foundations used in this review, Social Capital Theory explains how social networks are utilized to achieve a common purpose.

### **School Climate and Culture**

This section will define and discuss school climate, embedded in school culture, historical reviews, and the role that climate and culture play regarding student outcomes and a school's success. Educational researchers make distinctions between school climate and culture. According to Eller and Eller (2009), school climate is the everyday feel within a school while culture is embedded as the foundation. Expressed differently, climate is often viewed as the behavior, while culture is comprised of the norms of the school (Hoy, 1990). Therefore, the culture of the school creates the climate.

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In essence, climate is the “how”, while culture is the “why”. For example, how teachers, students, parents, and other members of the community feel about their school is climate; why they feel the way they do is determined by the cultural values and beliefs of those within the school (Stover, 2005). In this respect, school climate (i.e., the way people feel about their school) is dependent on the values and behaviors of those in the school (i.e., culture). Thus, school climate is defined by the stakeholder’s perceived beliefs about their respective school in reference to the quality and character of school life, influenced by the norms, goals, values, interpersonal relationships, instructional practices, and organizational structures within the school (Smith, 2018).

Ali and Siddiqui (2016) define culture as the norms, values, beliefs, and customs which develop the identity of any organization. Norms are defined by Brookover et al. (1978) as shared beliefs regarding the appropriate forms of behavior and expectations for members of a particular social system or school. For this study, culture is best described by Vargas et al. (2005) as a set of values, beliefs, ideas, customs and behavioral norms shared by members of a group. School culture is unique in that it considers societal variables including race, gender, socioeconomic status, experiences and other unifying denominators to establish its values, beliefs, and expectations (Lareau & Horvat, 1999).

The concept of school climate is not new. Discussions about the effects of culture and climate in school began in the early 20th century with Perry (1908). In his book, Perry stressed the importance of order, industry and school culture as pervasive moral influences. He believed for the school to maximize its success, leaders should capitalize on all three factors mentioned. It is believed that Kurt Lewin was the first to reference organizational climate scientifically. Lewin developed an approach to the study of human behavior that was the origin of social

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psychology, known as the Field Theory (Hall & Lewin, 1936). His study focused on the relationships between variables that influence human behavior across the traditional confines of various sciences, including a person's environment (McGiboney, 2016).

Lewin believed that the behavior of a person was dependent upon the individual and the environment. The formula developed to highlight the interaction between the behavior (b) and function (f) of the person (P) and environment (E) was  $b = f(P, E)$ . Schneider, Bowen, Ehrhart, and Holcombe (2000) believed that Lewin's work on social climate offered the first definition of organizational climate and its influence on people. They defined organizational climate as perceived patterns in the experiences and behaviors of people in the organization. Also, they concluded that the sense people make of the patterns of behaviors they have creates the climate.

Tagiuri and Litwin (1968) explained organizational climate consisting of four fundamental elements which included ecology, milieu, social systems, and culture. In his explanation, Tagiuri categorized the components of each element. Ecology consists of buildings, grounds, classrooms, facilities, safety, and other resources. Milieu is made of the organizational personnel such as the principal, teacher, students, parents, and other members of the school. Social systems are comprised of the shared connections and relationships of the school faculty and students, and the communication with parents and community. Culture is again described as the norms, values, beliefs, and customs which develop the identity of the organization (Ali & Siddiqui, 2016).

An organization's culture dictates its collective personality. If culture is the personality of the organization, then climate represents the organization's attitude. It is reasonable to assume it would be easier to change an organization's attitude (climate) than it would be to change its personality (culture). For that reason, school leaders that wish to shape a new school culture

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should start with an assessment of the climate and use it as the main leveraging point. If the culture of a school is ineffective, there are probably climate issues that were missed that must be fixed to positively impact culture.

### **Constructs of School Climate**

The four constructs of school climate will be detailed in this section. These constructs develop within the school's environment and include multiple variables that influence a school's climate. Further, these components have an impact on student outcomes and should be considered when attempting to shape the culture and climate of the school.

**Academic component.** After an extensive review of 327 literature sources, Wang and Degol (2016), developed and defined four domains of school climate including 1) academic, 2) community, 3) safety and 4) institutional environment. Academic climate is defined by the way in which learning and teaching are promoted in the school, and is perhaps the most important domain of school climate, according to Thapa et al. (2013). Wang and Degol (2016) suggest that academic climate is usually distinguished by three sub-categories, including school leadership, teaching and learning, and professional development.

**School leadership.** School leadership refers to the principal's and other administrator's role that contributes to transforming and implementing the school's vision through communication and guidance (Leithwood & Riehl, 2003). Transformational leaders communicate the school's vision to all stakeholders, motivate others to work toward a common goal, show respect for all members of the group, and express empathy for individual feelings and needs (Grayson & Alvarez, 2008; Leithwood & Riehl, 2003). Also, research tells us that the most successful leaders in schools find ways to articulate, build connections, and bridge relationships between administrators, teachers, and students (Waters et al., 2004).

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***Teaching and learning.*** Teaching and learning include a variety of techniques and instructional strategies that educators implement and deliver to their students. The instructional practices regularly delivered by the teacher will have a strong impact a students' learning experiences (Stefanou, Perencevich, DiCintio, & Turner, 2004). Marks (2000) and Newmann and Wehlage (1993) believed that to promote academic motivation, instructional practices should be rigorous, hands-on activities that have significant real-world applications. In addition, effective instructional practices should be differentiated by personalizing each activity to fit the needs and skill sets of individual students. Deemer (2004) stated that student learning is also influenced by the individual teacher's beliefs, expectations, and goals. This statement is supported by Hoy, Tarter, and Hoy (2006) and Roeser and Eccles (1996), who found that teachers establish these expectations through the academic challenges they present, their endorsement of elevated academic rigor and performance, and their emphasis on student improvement and progress.

***Professional development.*** Professional development is defined by the opportunities and programs provided to teachers that foster and develop instructional strategies and student learning (Klein & Riordan, 2009). According to their research, most educators believe that quality professional development provides research-based content, offers an opportunity to practice strategies in a setting similar to the classroom, is sustainable over time, offers opportunities to collaborate, and is resource rich (Borko 2004; Klein & Riordan, 2009; Lieberman & Grolnick, 1996; Lieberman & McLaughlin, 1992; Loucks-Horsley, Love, Stiles, Mundry, & Hewson, 2003; McLaughlin & Talbert, 2006; Webster-Wright, 2009; Wilson & Berne, 1999). Also, the goals for professional development should align with the school and

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district goals, model strategies to improve delivery, and offer feedback through formative teacher evaluations (Siko & Hess, 2014).

**Community (relationships) component.** The second domain of climate, according to Wang and Degol (2016), is the community. Community, or relationships, refers to the quality of interaction and partnerships between the members of the school, families, and other stakeholders (Epstein et al., 1997). The community domain of school climate is defined by Wang and Degol (2006) as having four dimensions: quality of interpersonal relationships, connectedness, respect for diversity, and community partnerships.

***Quality of interpersonal relationships.*** Quality of interpersonal relationships refers to the consistency, frequency, and nature of the relationships that exist within the school. These relationships include teacher-student, teacher-teacher, student-student, and other members of the school such as administration and support staff (Barth, 2006; Crosnoe et al., 2003). Mutual feelings of support, trust, respect, and caring are all characteristics of the positive interpersonal relationships that develop within a school (Birch & Ladd, 1997; Wang & Dishion, 2011). Positive interactions among these groups allow for effective communication, collaboration, and support.

***Connectedness.*** Connectedness is characterized by feelings about the school, a sense of belonging at the school, positive relationships between teachers and peer groups, and active engagement in school activities (Thompson et al., 2006). According to Waters, Cross, and Shaw (2010), a school's ecology, joined with interpersonal interactions, also help to enhance the connectedness of the school members. School connectedness can also be described by the groups' collective views of school attachment and bonding. Connectedness indicates the school's ability to foster a sense of identity and attachment among its members (Brookmeyer,

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Fanti, & Henrich, 2006; Freeman et al., 2009). Further, McNeely, Nonnemaker, and Blum (2002) found that students who are connected and engaged in their respective schools consider themselves to be an essential part of the school environment.

***Respect for diversity.*** Respect for diversity is described by the presence of cultural awareness, appreciation, and respect for all members of the school community (Chang & Le, 2010; Esposito, 1999). Schools that epitomize respect for all diversities hold every member accountable, regardless of ethnicity, gender, sexual orientation, or religious affiliation, to the same expectations and morals standards (Mattison & Aber, 2007). Additionally, Weinstein, Curran, and Tomlinson-Clarke (2003) suggest that teachers who develop culturally sensitive classrooms are those who encourage student interests and promote independence, provide students with opportunities for decision-making, and express appreciation for student thoughts and opinions. The same would apply to administrators and other leaders in the building who cultivate the same support for all members of the school community to promote a positive climate and culture.

***Community partnerships.*** Wang and Degol (2016) identify community partnerships as the role that parents and other community members play in the school setting. Hill and Taylor (2004) describe a robust community partnership as one in which parents and community members are involved in school decisions, communicate with the teachers and other school personnel, and attend events such as teacher-parent conferences, school performances, and extra-curricular activities. Other characteristics of strong community partnerships include schools that are inviting to parents and community members, embrace mentoring programs and business partnerships, and offer safety patrols that may have positive effects on student achievement and behavior (Epstein et al., 1997).



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**Safety component.** Safety is the third domain of climate, according to Wang and Degol (2016). Bucher and Manning (2005) describe a safe school as one in which the entire climate provides students, teachers, administrators, staff, and visitors opportunities to interact in a constructive, non-threatening manner that reflects the mission and vision of the school while cultivating positive relationships and growth. The safety domain of school climate is defined by Wang and Degol (2016) as having three dimensions: physical safety, emotional safety, and order and discipline.

**Physical safety.** The physical safety of a school refers to the degree in which violent behavior, aggression, and harassment exist and what measures are implemented to ensure the safety of its members (Devine & Cohen, 2007; Wilson, 2004). Osher, Bear, Sprague, & Doyle (2010), suggest implementing strategies such as positive behavioral supports and research-based classroom management techniques to reduce physical violence in schools. Effective communication with law enforcement and the use of effective school resource officers are also a preventative measure employed to reduce the threat of physical violence in schools (Gravitt, 2016).

**Emotional safety.** Equally important as physical safety, Asby et al. (2004) indicate physical violence that occurs in schools is frequently a result of students who have been bullied, teased, or ostracized by other members of the school community. Schools that ensure the emotional safety of its members will 1) provide a caring and genuinely supportive staff, 2) have counseling services available for students who are struggling with emotional depression, and 3) forbid verbal bullying or harassment (Kuperminc et al., 2001). Additionally, emotionally safe schools allow students, teachers, and other members to interact and communicate effectively, as

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well as express their feelings and share opinions without the fear of retaliation (Rones & Hoagwood, 2000).

***Order and discipline.*** Wang and Degol (2016) define order and discipline by the degree to which students subscribe to the rules and policies of the school, the consistency and fairness of the rules and policies, and the manner in which acts of incivility or insubordination are handled. According to Gottfredson, Gottfredson, Payne, and Gottfredson (2005), disorderly schools have a high occurrence of delinquent actions committed by students against other school members. To reduce the disorderly practices, behavioral expectations must be communicated, consistently enforced, and applied fairly to establish a culture of order and discipline within schools (Mabie, 2003). Also, Fenning and Rose (2007) suggests strategic and proactive classroom management techniques produce better results when dealing with behavioral issues from students rather than focusing on punitive punishments that may cause adverse effects.

***Institutional environment component.*** The fourth and final domain of school climate, according to Wang and Degol (2016) is the institutional environment. The physical appearance of the campus, the buildings, and the classrooms may directly impact the experience school members have in their respective environments (Dawson & Parker, 1998). As it relates to school climate, the institutional environment encompasses the adequacy of the school setting, the maintenance and infrastructure of the building, and the accessibility and allocation of educational resources (Wang & Degol, 2016).

***Adequacy of the school setting.*** Environmental adequacy is explained by Wang and Degol (2016) as the physical features of the building and classrooms, such as temperature, lighting, sound, and maintenance. Researchers have found that the ideal learning environments include appropriate heating and air conditioning, an abundance of lighting, proper acoustical

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control, and continuous maintenance and upkeep (Buckley, Schneider, & Shang, 2005; Haines, Stansfeld, Job, Berglund, & Head, 2001; Uline & Tschannen - Moran, 2008). Further, Buckley et al. (2005) shared that the physical features of the school building increased teaching performances, which impact student success.

***Maintenance and infrastructure.*** Structural organization refers to the architectural design of the school building (Leithwood & Riehl, 2003). These design features may consider the size of the hallways and ease of movement, presentation of the outdoor space, availability of large-group meeting areas, ample doors and access, natural lighting and views, technology for teachers, and appropriate color choices (Tanner, 2000; Uline & Tschannen - Moran, 2008).

Other characteristics of structural organization related to perceptions of school climate include school size (Bowen, Bowen, & Richman, 2000), class size (Finn & Achilles, 1999), school start and end times (Baker et al., 2001), and student mobility (Griffith, 2000).

***Accessibility and allocation of resources.*** Availability of resources is the third and final dimension of the institutional environment component for school climate (Wang & Degol, 2016). This aspect considers the accessibility of resources that teachers and students have in the form of technology, equipment, programs, and other resources that enhance instruction and learning (Oakes & Saunders, 2004). While the most important aspect of instruction is dependent on the interaction of the teacher and students, resources and tools (e.g., laptops) are often used to facilitate and complement the learning experience (Annan-Coultas, 2012). The absence of resources is often a reflection of lower-income schools and communities, resulting in lower student achievement. Miles and Darling-Hammond (1998) found when lower socio-economic students and schools gain access to instructional resources, academic outcomes increase.

### **Impact of Climate on Student Outcomes**

State departments of education have concentrated educational reform on curriculum-based changes aimed at improving student outcomes without considering alternative factors that may influence the results (Moyer et al., 2011; Wilson & Rossman, 1993). However, many educational researchers now consider every aspects of the school experience, including the quality of teaching and learning, interpersonal relationships, school safety, and the institutional and structural features of the school environment that can lead to positive student outcomes (Ali & Siddiqui, 2016; Anderson, 1982; Eller & Eller, 2009; Schneider et al., 2000; Wang, & Degol, 2016). These researchers emphasize the need to explore and understand school climate and culture because of its established connections to academic achievement, behavior, and psychological outcomes for students.

School climate is a complex and multidimensional concept that numerous researchers have studied as a catalyst for improving student outcomes (Wang & Degol, 2016). The experiences offered by the school's environment play an essential part in the developmental outcomes for students. Student outcomes discussed in this review include academic, behavioral, as well as social and emotional. The academic climate, community and relationships, safety, and the institutional environment components are all considered when interpreting student outcomes.

**Academic outcomes.** Academic achievement is more dependent on the academic and community domains of school climate as opposed to the safety and institutional environment components, according to Wang and Degol (2016). Higher achieving school environments tend to emphasize the significance of commitment to high academics, characterized by effective administrations and teacher leaders who have confidence in their ability to improve student successes (Lee & Smith, 1999). Likewise, Hoy et al. (2006) found that teachers and school

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leaders who maintain high expectations and encourage students to perform at optimal levels have experienced greater growths in math and science. Their study focused on a diverse group of 96 high schools and random sampling of teachers from each school. These researchers challenged themselves to go beyond variables, such as socioeconomic status, that influence academic outcomes. Instead, Hoy et al. (2006) searched for school-level characteristics and climate factors that made a difference in a school's academic optimism.

A further study conducted by Pellerin (2005) suggested that sustaining high standards and expectations will discourage disengagement from students. Using data collected from the High School Effectiveness Study (HSES), which is a component of the National Educational Longitudinal Study, Pellerin used multilevel modeling to test the effect of high school socialization style on student disengagement from 10th to 12th grades, controlling for both the sociodemographic context of schools and student characteristics. Pellerin concluded that authoritative schools have the lowest levels of disengagement and indifferent schools the highest.

In addition to holding students accountable and encouraging optimal performance, Lee and Shute (2010) linked teacher perceptions of the principal's efficacy and effectiveness to higher academic achievement spanning from kindergarten through high school. Their research took into consideration three school climate constructs including academics emphasis, teacher variables, and principal leadership. Principal leadership was defined as the principal's ability to influence the actions of the school community members including teachers, parents, students, and district personnel (Hoy & Hannum, 1997).

The student's awareness and perception of the school's academic goals have also been associated with improved academic achievement (Wang & Eccles, 2013). In this sense, Bandura (1986) would suggest higher academic achievement is a result of an increase of the student's

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self-efficacy. Also, Haynes, Emmons, and Ben-Avie (1997) submitted the school's ability to encourage students to measure their successes based on individual gains rather than performance standards will presumably yield students with a greater intrinsic interest in learning and academic success. These researchers believe that creating an intrinsic learner is particularly important for racial minorities and low socioeconomic students to achieve academically.

Relationships, identified as the community component by Wang and Degol (2016), which exist and develop in the school environment, also play a vital role in academic outcomes for students. Schools that encourage a community component are characterized by positive interpersonal relationships, good communication, seamless cohesiveness, and a sense of belonging between students, teachers, and other school members (Wang & Degol, 2016). Schools which exhibit these traits and develop a climate and culture of support for students and teachers produce better results in academic achievement. According to MacNeil, Prater, and Busch (2009), schools that display these qualities demonstrate higher percentages of academic successes compared to schools that are deficient in these community characteristics. Other researchers have linked positive teacher-student relationships to higher standardized scores (Esposito, 1999; Hoy & Hannum, 1997) and students' motivation to learn (Patrick, Ryan, & Kaplan, 2007). Further research suggests schools that reflect a higher percentage of dropout, or students who do not graduate, report that their students are less connected to the school and have negative relationships with their respective teachers (Worrell & Hale, 2001).

Safety characteristics of a school in relation to student academic achievement have been inconclusive in a review of the literature. Maguin and Loeber (1996) found that relationships do exist between academic performance and misconducts or delinquencies. While these researchers conclude that poor academic performance is related to the persistence of misbehaviors and

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cognitive deficits, a further look into the literature suggests the connections are not clearly defined (McEvoy & Welker, 2000). For instance, after controlling for academic and community climate factors (e.g., high academic standards, teacher commitment, relationships) and institutional characteristics (e.g., size, socio-economic status (SES), location), Ma and Wilkins (2002) reported that serious behavioral problems within a school do not predict the academic success of individual students. Moreover, Ruus et al. (2007) found that school safety had the weakest relation to academic achievement when compared to other climate variables. In contrast, Esposito (1999) did associate better security factors with higher academic math achievements in particular grade levels.

Much like the safety component, research on the institutional environment of a school, such as size, type, location, SES, and racial compositions, has been inconsistent as it relates to its influence on student academic achievement (Stewart, 2007; Weiss, Carolan, & Baker-Smith, 2010). For instance, Cotton (1996) concluded that some studies established favorable academic results and lower levels of high school dropout rates for smaller sized schools while others studies revealed no difference in academic results between large and small sized schools. Further research conducted by Buckman and Tran (2015) found that school enrollment sizes are negatively related to high school “on-time” completion rates after controlling for other variables. “On-time” refers to students who graduated from the four-year cohort. Conversely, Lubienski, Lubienski, and Crane (2008) explained academic and community climate variables held more variance in academic student success than the institutional environment components, regarding school size.

While the size of a school may produce mixed results when considering academic success when reviewing the research, other components of the school’s institutional environment

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have yielded more consistent findings. Student cognitive ability, SES composition of a school, and material resources have all been found to impact academic outcomes. Many researchers have concluded schools who experience higher percentages of lower SES families or students with less cognitive ability will return less academic growth and student achievement (Aikens & Barbarin, 2008; Kieffer, 2012; Perry, 2012). Also, a study by Greenwald, Hedges, and Laine (1996) revealed the availability of material resources, teacher class-sizes and teacher-student ratio, and financial accessibility, when utilized appropriately, all contribute to increases in academic outcomes for students. It is important to note that while the availability of resources has been found to increase academic performance, some researchers believe increases in academic achievement are more dependent on the schools' and teachers' use of the resources (Cohen, Raudenbush, & Ball, 2003).

A review of the literature by Wang and Degol (2016) suggests the academic and community components of school climate demonstrate the most significant role. Schools that establish transformational leadership, demand high academic standards, and commit to the students' success will achieve greater academic results. Also, forming positive and appropriate relationships between all school members, embracing cultural diversities, and optimizing communication between the school and the community it serves will ultimately foster the greatest results for academic outcomes (Wang & Degol, 2016).

**Behavioral outcomes.** Behavioral problems and negative decision-making such as bullying, delinquency, aggression, and substance abuse have often been considered and associated with poor school climates. Likewise, many researchers offer conclusions that high-quality academic environments reduce behavioral problems in schools (Wang & Degol, 2016). For example, McEvoy and Welker (2000) found that redirecting a student's attention toward



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academic achievement and away from antisocial behavior improved behavior outcomes. Also, Gregory, Cornell, and Fan (2011) suggested school's that provided distinctive academic and social supports experience a reduction in discipline referrals and student punishments.

Additionally, Reis, Trockel, and Mulhall (2007) provided evidence from their study that schools which focused on a child's understanding of the lesson rather than ability reduced student aggression. Finally, Wang and Dishion (2011) discussed a reduction in behavioral problems when teachers encouraged students and assisted them with achieving academic goals.

Establishing a relationship between academic climate and substance abuse is more difficult, according to Wang and Degol (2016). Studies have been inconclusive when attempting to correlate school climate and issues of substance abuse. For example, Mayberry, Espelage, and Koenig (2009) surveyed students that reported receiving a good education. That survey also found those same students were less likely to abuse alcohol and marijuana. On the other hand, Weishew and Peng's (1993) research found that a strong academic focus and student support systems did not predict less substance abuse. Wang and Degol (2016) concluded these conflicting outcomes might be attributed to behavioral concerns being measured within the confines of the schools, while substance abuse usually occurs outside of the school parameters.

Numerous studies have been conducted that draw support connecting the community climate component with behavioral outcomes for students. These studies overwhelmingly suggest students are more likely to acknowledge and conform to school rules and expectations when students, teachers, administrators, and other school personnel value, support, respect, and trust one another (Eliot, Cornell, Gregory, & Fan, 2010; Fletcher, Bonell, & Hargreaves, 2008; LaRusso, Romer, & Selman, 2008; Way, Reddy, & Rhodes, 2007). Also, Zaykowski and Gunter (2012) reported that a students' perception of strong and supportive relationships among school

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members were associated with less risk of experiencing bullying, aggression, and defiance. An additional study by Ravens-Sieberer, Freeman, Kokonyei, Thomas, and Erhart (2009) revealed that students who attended schools in which peers were kind and accepting of each other, experienced greater health and social-emotional growth.

A student's perception of safety in the school environment is often associated with the exposure to aggressive behaviors and bullying. Also, a determining factor is the school's attitude toward bullying and threatening behaviors as perceived by the students. Goldstein, Young, and Boyd (2008) found that students and teachers who believed bullies were unpopular and ostracized among the majority of school members tended to report more positive feelings of safety and connections. Also noted in studies of school climate and safety is the influence that aggressive acts have on the behavioral decisions of student peers. LaRusso and Selman (2011) indicated in their research that students who attended schools with more consistency in dealing with negative disciplinary issues would engage in less aggressive behaviors. Not surprisingly, Elsaesser, Gorman-Smith, and Henry (2013) reported students who perceived more exposure to violence and aggression in the school environment were more inclined and participated in unwarranted behaviors.

A review of the research by Wang and Degol (2016) suggests the institutional environment component of school climate, including structural features, may have an indirect effect on the behavioral outcomes for students (e.g., bullying). For instance, in a study conducted by Bradshaw, Sawyer, and O'Brennan (2009), the student-teacher ratio, poverty concentrations, student mobility, and school location predicted attitudes toward bullying, aggression, and experiences. Structural variables (e.g., poverty, racial composition, size, and

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location) also accounted for a large portion of variance in teacher and student mistreatment, according to findings from Gottfredson et al. (2005).

**Social and emotional outcomes.** School climate is also associated with the development of a student's self-esteem, coping strategies, feelings of self-efficacy, depression, and anxiety. With consideration to the academic and institutional environment components of school climate, limited research has been conducted to reveal the impact they may have on a student's social and emotional well-being. Much more effort has focused on the effects of the community and safety components of school climate regarding student social and emotional outcomes.

Community features that promote school belonging and connectedness, respect for diversities and positive relationships are crucial determinants in the development of social and emotional functioning (Wang & Degol, 2016). According to Freeman et al. (2009), students in negative school environments were described as having inferior emotional health compared with students who characterized their schools with positive climates. Also, productive and positive relationships between all members in school settings have been associated to positive growth and less occurrence of social and emotional distress (Way et al., 2007; Way & Robinson, 2003). In addition to encouraging strong interpersonal relationships between school members, increasing opportunities for more parental involvement has also proven to strengthen coping strategies and develop more optimistic attitudes toward school (Ruus et al., 2007).

Safety in school is a key component in securing the emotional well-being of students. Studies have shown that student perceptions of unfair and inconsistent application of rules, disciplinary actions, and overall school safety are negatively associated with emotional distress, anxiety, and depression (Graham, Bellmore, & Mize, 2006; Ozer & Weinstein, 2004). Further, increased volumes of school conflict, disorderly conduct, and aggression among students and

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teachers have been related to an increase in behavioral problems and depression (Kasen, Johnson, & Cohen, 1990). On the other hand, some researchers found schools that encourage tolerance and acceptance of diversities, such as sexual orientation, experience more positive attitudes about school and less depression reported by their respective students (Birkett, Espelage, & Koenig, 2009).

The school building is more than an institution to acquire academic knowledge. It is the place where children learn to cultivate positive social relationships, gain independence and develop socially and emotionally (Wang, & Degol, 2016). These contributing social contexts provide insight and have implications for the academic, social development, and psychological outcomes for students (Brand, Felner, Shim, Seitsinger, & Dumas, 2003). When schools establish positive climates, the majority of students succeed. When schools have negative climates and fail to produce favorable academic, behavior, and psychological outcomes for students, dropout rates increase and graduation rates decline.

### **Contributing Factors and Consequences of High School Dropouts**

This section will review literature that discusses high school dropouts. These readings explain why students fail to graduate from high school and the impact it has on the individual and the economy. Also, this segment identifies factors that contribute to a student's decision to drop out of high school including both, unalterable variables (i.e., gender, race, socioeconomic status) (Battin-Pearson et al., 2000) and controllable school factors (i.e., engagement, experiences, climate) (Ellenbogen and Chamberland (1997).

Historically speaking, the graduation rate was approximated at a mere 6.4% in 1900, according to Fine (1991). More than a hundred years later, graduating from high school is imperative when considering the impact it has on individual and societal outcomes. The decision

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to drop out of high school has an adverse effect, not only for the individual student but also for the economy. According to a report on high school graduates by the Alliance for Excellent Education (2018), approximately one in five students decide to drop out of high school every year. In other words, approximately 750,000 students fail to graduate from high school each year within a four-year cohort. The same report estimated that 3,689,300 high school students completed high school, resulting in a graduation rate of 83.2%. An additional report from the same alliance explained that the average high school graduate stands to earn an annual income of at least \$30,500, which is approximately \$10,000 more than the average person who does not complete high school.

### **Societal and Economic Impact of High School Dropouts**

According to Martin et al. (2002), students who drop out of school are more likely to experience health problems, engage in criminal activity, and become dependent on welfare and other government programs. In fact, Stanard (2003) reported that under the Center for Democratic Policies, Institute for Educational Leadership, dropouts comprise of 52% of welfare recipients, 82% of the prison population, and 85% of the juvenile justice cases. Based on these statistics, failing to graduate from high school has negative implications, not only for the individual but the nation as a whole.

Hayes et al. (2002) found that dropping out of school correlated to a host of adverse outcomes for the country. These negative consequences included anticipated national income, forgone tax revenue supporting government services, increased demand for social services, increased crime and antisocial behavior, reduced political participation, and weaker levels of health. Furthermore, Lunenburg (1999) estimated the cost of high school dropouts to the United States is approximately \$250 billion in social services, lost wages, and taxes.

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The Alliance for Excellent Education (2018) projected the likely benefits of graduating only 1,000 more students per state in our nation and the District of Columbia would produce \$554 million in additional earnings each year. The alliance also considers these new graduates would collectively spend approximately \$57 million each year purchasing vehicles and, by the time they are at the midway point of their careers, purchase homes worth \$1.4 billion more than what they would have spent without diplomas. Even more impactful, it is estimated that increasing the graduation rate from 83.2% to 90% would produce 250,000 additional graduates, who would earn \$3.1 billion more in annual income, increase spending by \$2.5 billion, increase federal, state, and local tax by \$664 million, and save health-care cost nationally by \$16.1 billion.

### **Contributing Variables**

In 1992, National Center for Education Statistics conducted a comprehensive longitudinal study of students, at-risk characteristics, and factors affecting transitions that lead to graduation and post-secondary options. The study began by tracking eighth grade students in 1988 and became commonly known as the National Education Longitudinal Study of 1988 (NEL: 88). This study is significant because it identified at-risk factors common to students that are challenged to complete high school and graduate on time. According to the report, when controlling for basic demographic characteristics (i.e., gender, race/ethnicity, SES), at-risk dropout factors include:

- single parent households, over age students compared to the peer group or frequent student mobility;
- students with parents who are not actively involved in the student's school, parents who never talk about school-related topics, parents who have low educational expectations of the child;

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- students who repeat grade levels, students who historically have low achievement in math and English, students who do not complete assignments;
- students who come to school unprepared, students who skip classes or are frequently tardy or absent from classes;
- students whom teachers view as passive, disruptive, inattentive, or underachieving; and
- students from urban schools or schools with high minority populations (p. vi).

A review of the additional literature reveals consistencies in the types of students who drop out of school, according to Christle et al. (2007). Socioeconomic status (SES), for example, endures a strong connection to dropping out, with students from low-income families being 2.4 times more likely to drop out of high school than middle-income students (Coalition for Juvenile Justice, 2001). Although no single risk factor can be used to predict who is susceptible to dropping out of school accurately, the National Dropout Prevention Center at Clemson University (2007) has determined overall trends that emerge from the literature. Hammond et al. (2007) reviewed and narrowed the literature to forty-four citations that met the criteria to analyze risk factors contributing to high school dropouts. These researchers found that dropping out of school is related to a variety of influences that can be classified in four major categories including 1) individual, 2) family SES, 3) school, and 4) community factors.

The accuracy of dropout predictions increases when combinations of multiple risk factors are considered, according to the report authored by Hammond et al. (2007). An example of multiple risk factors would be students who are diagnosed with emotional disabilities, as well as learning disabilities, making them particularly vulnerable to dropping out of school (Suh & Suh,

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2007). Also, findings from the same report suggest that dropouts are not a homogeneous group. Many subgroups of students can be identified based on when risk factors emerged, the combinations of risk factors experienced, and how the factors influenced them. Other conclusions drawn from the report found that dropping out of school is often described as a process, not an event, with factors stacking and compounding over time. Additionally, several variables have been found to correlate with dropping out of high school. These variables focus on (a) demographic characteristics, (b) family SES, (c) school experiences, (d) engagement, (e) adult responsibilities, and (f) school and community characteristics, resulting in a long process of disengagement before finally making the decision to drop out of school (Cairns, Cairns, & Neckerman, 1989; Gleason & Dynarski, 2002; Hammond et al., 2007; Rumberger, 2004).

**Demographic characteristics.** A number of unalterable, individual demographic characteristics such as race/ethnicity (Battin-Pearson et al., 2000), immigration status (Rumberger, 1995), limited English proficiency (Sheng et al., 2011), and gender (Battin-Pearson et al., 2000; Goldschmidt & Wang, 1999), can contribute to the decision to leave school without graduating. For instance, research conducted by Griffin (2002) indicated that the proportion of Black students who fail to graduate from high school was 3% higher than that of White students. Additionally, Griffin (2002) reported that even more of a disparity exists for Hispanic students, who drop out of high school at a rate of 6% higher than White students. Two years later, Smink and Schargel (2004) reported an annual dropout rate of 28% for Hispanic students, 13% for Black students, and 7% for White students.

In 1964, the United States Department of Health, Education, and Welfare sponsored a national study involving students (N = 600,000) and teachers (N = 4000) (Coleman et al., 1966). The study focused on educational equality for students from different ethnicities and religions.



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While it did not specifically produce dropout or graduation data, it was the first study to examine the relationship of socioeconomic status and ethnicity to academic achievement. The report was significant because it revealed that minority students performed considerably lower on standardized achievement tests, which ultimately leads to the successful completion of high school when compared to White students. Additionally, the study found that minority students from low-income backgrounds performed at a higher academic level when placed in integrated schools (Coleman et al., 1966).

A vast majority of the Hispanic population of students fall into other at-risk categories which compounds the graduation problem. According to Smink and Schargel (2004), Hispanic students have the highest rate of absenteeism with over a third of the students missing at least three days per month. Additionally, these researchers estimated that approximately 30% of Hispanics live in poverty and note that they have the highest percentage of teen pregnancies. Furthermore, almost two-thirds of the Hispanic population attend urban schools, which has also been identified as an at-risk category (Smink & Schargel (2004).

Immigration status and limited English proficiencies have also contributed largely to the Hispanic dropout rates in America, according to the Child Trends Data Bank (2015). Foreign-born students had a status dropout rate of twelve percent in 2014, compared with eight percent for children of foreign-born parents, and six percent for children with native-born parents. While foreign-born students only make up 10 percent of the high school student population, they account for 18 percent of the dropout rate in America. Furthermore, Smink and Schargel (2004) found that the dropout rate for non-English speaking Hispanic students was nearly four times higher than English speaking Hispanic students.

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Gender seems to play a minimal factor that can contribute to dropping out of school. Most studies suggest that males tend to drop out of school at a higher rate than females (Battin-Pearson et al., 2000; Goldschmidt & Wang, 1999; Rumberger, 2004). According to the Child Trends Data Bank (2015), fifty-five percent of all dropouts are males compared to forty-five percent who are female. However, a study conducted by Lichter, Cornwell, and Eggebeen (1993) revealed a higher rate of female dropouts when analyzed as a rural subset compared to their male counterpart when accounting for poverty and early childbearing factors.

**Family socioeconomic status.** Family-related characteristics such as socioeconomic have been identified as highly predictive variables for identifying potential high school dropouts, according to Hammond et al. (2007). In fact, reviewing of over 3400 pieces of literature, Hammond et al. (2007) determined that 83% of the research-based studies identify low socioeconomic status as a significant contributor for predicting high school dropout. Additionally, a study conducting by Kauffman (2002), spanning almost three decades long, found that students from high family incomes had the lowest dropout rates. Subsequently, students that were considered in poverty were three to four times more likely to drop out high school.

Other characteristics such as family support systems, single-parent families, educational level of parents, and whether or not older siblings completed high school also contribute to a student's opportunity to graduate, according to research conducted by Woods (1995). However, in the same study, Woods (1995) reported that poverty was the strongest non-school related predictor of dropping out of high school. Not unexpected, compounding family characteristic like those mentioned with a lower socioeconomic status dramatically influences the student's risk of dropping out of school.

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**School experiences.** A review of the literature suggests that one of the strongest predictors of leaving school is low academic performance and disengagement (Baker et al., 2001; Battin-Pearson et al., 2000; Cairns et al., 1989; Hammond et al., 2007). Research from the authors cited go further to identify several factors related to low academic achievement including failing grades, failing test scores, nonacademic placement and pathways, overage for grade level, being retained in the same grade level, and behavioral problems. Among these factors, Slavin, Karweit, and Madden (1989) found that 90% of the dropouts in their study had been retained at least one time in their educational career, therefore, making it the number one factor to consider when identifying students at risk of dropping out of school. Slavin et al. (1989) went further and reported that not only did being retained not improve academic achievement, but it also increased the chances of the student dropping out of school by 50%. Woods (1995) found that repeating more than one grade raised the chances of dropping out of school by four times.

Grades are also contributing elements that determine low academic achievement. In fact, Bowers et al. (2013) concluded in their research that failing classes based on grade performance, regardless of demographic considerations, was the most cited reason for deciding to leave school without graduating. In addition to assessing academic achievement, an extensive line of research suggests that grades also demonstrate a student's ability to negotiate social processes and school norms when considering social and behavior components (Bowers, 2011; Lekholm & Cliffordson, 2009; Willingham, Pollack, & Lewis, 2002).

**Disengagement.** Low performance on grades, absenteeism, and behavior issues are all signs of students who are disengaged in school, according to Tyler and Lofstrom (2009). Rumberger and Lim (2008) found that in a review of 203 publications over 25 years, school engagement was dependent on individual characteristics of the student (i.e., educational

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performance, behaviors, attitude, and background) and the institutional characteristic of their families (i.e., structure, resources, and practices), schools (i.e., composition of student body, resources, structural features, and norms), and community (i.e., community resources and positive role models). Additionally, Rumberger (2004) suggested that a student's ability to get along with peers and participation in extracurricular programs also facilitate school engagement. Tyler and Lofstrom (2009) concluded that, most common in surveys, students that decide to drop out of high school report some measure of disengagement as the primary reason for leaving school.

Ellenbogen and Chamberland (1997) found that the disengagement from the school was a result of students who failed to form meaningful relationships with peers and teachers. In a survey of 234 students, these researchers found that high school dropouts tended to have fewer friends at school compared with students who completed high school. Further, after interviewing 52 participants, Bear, Kortering, and Braziel (2006) found in their research that students identified socializing with friends was the best part of school and that the worst parts were certain classes, teachers' attitudes, and difficult schoolwork. Both findings suggest that students who form a social connection at school are more likely to connect academically, therefore providing a greater opportunity to stay in school and graduate.

Involvement in extracurricular activities provides a measure of school engagement when considering students at risk of not graduating. In his study, McNeal (1995), found that not only did participation in school activities reduce the chances of dropping out of school, but also that the type of extracurricular activity mattered. McNeal (1995) discovered that students participating in athletics, who had been previously identified as at risk, were 1.7 times less likely to drop out of high school compared to at-risk fine art students who were 1.2 times less likely to

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drop out. Adding to this finding, Buckman and Tran (2015) found that students benefit more from smaller school enrollments because of increased pressure to be engaged and participate in school and community activities. In a smaller school setting, teachers and other school leaders are likely to provide more attention to each student, which makes it is more difficult for students to become invisible, according to Buckman and Tran (2015).

Absenteeism has been identified as variable to consider when measuring student engagement in school (Allensworth & Easton, 2007; Rumberger & Lim, 2008). In fact, more than 50% of non-graduates can be identified using attendance rates by the end of the first semester, according to Allensworth and Easton (2007). When studying Chicago Public Schools, these researchers found that first-year high school students who missed more than two weeks of school in their first semester were given only a 40% chance of graduating from high school in four years. Subsequently, almost 90% of the students who were engaged in school and missed less than one week of school their freshmen year graduated successfully in four years. In the same study, Allensworth and Easton (2007) discovered that measuring attendance rates were eight times more reliable than standardized test scores when predicting dropout rates.

Many researchers have resolved that negative student behavior is an indicator of disengagement in school, which eventually leads to the decision to drop out of school (Balfanz, Herzog, & Iver, 2007; Battin-Pearon et al., 2000; Rumberger & Lim, 2008; Suh & Suh, 2007). In studies conducted by Balfanz et al. (2007) and Suh and Suh (2007), both identified delinquent student behavior as one of the top five predictor variables when determining high school outcomes for students. Rumberger and Lim (2008) reported that school policies and disciplinary practices in high school matter regarding graduation rates, and that students are more likely to

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drop out if they attend schools with poor disciplinary climates, as measured by student disruptions and referrals.

Wang and Eccles (2012) explained that active engagement in high school promotes the skills, competencies, and values that allow students to complete high school and transition into adulthood. Similarly, Wang and Fredricks (2014) found that adolescents who had declines in behavioral and emotional engagement with school tended to have increased delinquency and substance use over time. Further, they found that lower behavioral and emotional engagement predicted an increased likelihood of dropping out of school. This particular study (1,272 students from an economically diverse county) controlled for gender (51% female), ethnicity (58% Black, 36% White), SES, teacher support, and parental support. Researchers found reciprocal associations between school engagement and problem behaviors and how the interplay between the two influenced students to drop out of school.

**Adult responsibilities.** Students who become pregnant or students who become employed while in school are two of the primary adult responsibilities that emerge from the literature when examining reasons why youths decide to quit school (Eloundou-Enyegue, 2004; Entwisle, Alexander, & Olson, 2004; Manlove, 1998; Rumberger & Lim, 2008). Hammond et al. (2007) found that in reviewing thousands of studies on high school dropouts, 25% of the articles identified parenthood as a significant cause for students to drop out of school. These researchers estimate that 25% of females and 8% of male dropouts make the decision based on the consequence of parenthood. Further, Smink and Schargel (2004) found that Hispanic teenagers had the highest teen birth rates and that this finding correlated to the decrease in graduation rates among Hispanic students.

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McNeal (1995) explained that teenage dropouts choose employment over school due to financial burdens, family responsibilities, and to gain adult status. He went to further to explain the type of employment and demand of the occupation could predict the likelihood of dropping out of school. For instance, jobs in farming fields, manufacturing, and services were associated with higher dropout rates compared to jobs like babysitting and lawn care.

For students that are older than their peers, who may have been retained or held back in school, the option to take on adult responsibilities may be appealing. Older students may be more susceptible to societal pressures that pull them out of school, such as gaining employment, according to Stearns and Glennie (2006). Subsequently, Stearns, Moller, Blau, and Potochnick (2007) believe that these adult responsibilities may serve to pull these students out of school as the identity associated with that of a worker, parent, or provider becomes more appealing than that of a retained, failing student.

**School and community characteristics.** High school dropout rates are a reflection of the schools and the communities they serve. Although the low socioeconomic status of a community is generally associated with the tendency to drop out of school, according to Rumberger (2004), Alspaugh (1998) argues that other variables related to lowering the socioeconomic status of the community should be examined when considering high school graduation rates. In studying 428 Missouri school districts, Alspaugh (1998) focused on the relationship between school dropout rates and the general well-being of the communities. The first part of the study focused on school characteristics, while the second part focused on the well-being of the communities, including unemployment rates, average family income, and crime rates.

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Alspaugh (1998) considered school size, the grade span, and extracurricular activities when determining school characteristics. The study revealed that as enrollment in a high school increased, the graduation rate decreased. Other researchers have gone even further and indicated a relationship between school size and school climate (Byrk & Thum, 1989; Pittman & Haughwout, 1987). Bryk and Thum (1989) found that smaller schools are more capable of fostering a productive social environment, conducive to student and faculty engagement, which leads to a favorable school climate and encourages the completion of high school.

The high school grade span is defined as the number of grade levels offered in a high school. Alspaugh and Harting (1995) found that fewer transitions from elementary to the high school level led to the higher success of graduation rates. School systems that only offered k-6 and 7-12 transitions experienced higher graduation rate percentages when compared to systems that incorporated more transitions such as K-4, 5-6, 7-9, and 10-12. They concluded that more transitions led to the loss of student academic achievement, which led to decisions to drop out of school.

McNeal (1995) indicated that participation in highly visible extracurricular activities such as fine arts and athletics was related to keeping students in school and on time for graduation. Increasing participation is problematic for schools that have a limit on the number of students that can be involved in activities. Thus, as school enrollment increases, the percentage of students that have an opportunity to participate in extracurricular decreases. Therefore, schools with smaller student enrollments can offer more opportunities for participation, which can lead to higher graduation rates, according to Alspaugh (1998).

The well-being and characteristics of the community are also variables to consider when examining the potential for successful graduation rates. According to Wilson (1996), community



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characteristics and positive role models have a significant influence on high school age students.

Wilson believed that exposure to adults in a neighborhood with steady jobs helps to promote behaviors and attitudes that contribute to achievement and success in school for students.

Further, he argued that youths in such advantaged neighborhoods are more likely to value education, adhere to school norms, and work hard because that is what they see modeled for them by the adult community. Exposure to the opposite, delinquent subcultures, contributes to a higher rate of educational failures, leading to a higher percentage of students who drop out of school.

When comparing schools with the highest and lowest dropout rates of 196 high schools in Kentucky, Christle et al. (2007) found that the most significant variance was the socioeconomic status of the community. Schools that were located in neighborhoods below the poverty level had the highest dropout rates. Subsequently, neighborhoods and communities that are below poverty levels tend to have lower educational levels in the family households and higher crime rates, all of which lead to higher dropout percentage in the local high schools according to Alspaugh (1998).

Concluding the review of the literature on variables that may contribute to a student's decision to drop out of school, it appears an emphasis should focus on the identifying factors related to dropout rates that a school can control. While demographics, the structure and socioeconomic status of the family, and location of the school are all variables that are unchangeable, other school characteristics and positive experiences within the school, contributing to a more favorable climate, may offer more guidance and encourage students to stay in school.

### **Theoretical Framework**

To build a foundation and further understand human behavior and the role of the environment, this study utilizes the following theories: 1) Ecological Systems Theory (Bronfenbrenner, 1979), 2) Social Learning Theory (Bandura, 1977a), and 3) Social Capital Theory (Bourdieu, 1986; Coleman, 1988a; & Putnam, 1995). Each of these human and social relations theories are intertwined and provide guidance to explore why people react the way they do in their social, home, and work environments. These existing theories will serve as a theoretical framework for this study and assist in providing the reader with an understanding of social interactions, norms, and relationships that exist within a school setting.

Bronfenbrenner's Ecological Systems Theory (1979) helps explain why individuals behave differently when comparing their behavior in the presence of their family as well as their behaviors when they are in a school or work environment. Bandura's Social Learning Theory (1977) indicates that people learn from one another by observation, imitation, and modeling. Social Capital Theorists, Bourdieu (1986), Coleman (1988a) and Putnam (1995), refers to social structures related to trust, norms, and networks that organize and facilitate cooperation for mutual benefit and common purpose. A school's environment, be it negative or positive, can be associated with each of the social relations theories. The following section will provide a brief description of each theory and its role in this study.

#### **Ecological Systems Theory**

John Dewey (1938) provided a framework for Urie Bronfenbrenner's Ecological Systems Theory. Dewey understood how the values and culture associated with each child's family and community extended into their lives at school (Clifford et al., 2005). Also, John Dewey placed great emphasis on a student's social interactions and recognized the importance of the school's

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social learning environment. Research also suggests that a child's behaviors depend on the expectations, demands, and approvals of others within the school's social learning environment (Edman, 1968). From the statement above, one can assume the success of the learner could be highly influenced by their social interaction with their school's environment. In sum, Dewey (1938) believed the social environment of the child's family, community, and school have an important effect on the learner and his research lends support to Urie Bronfenbrenner's Ecological Systems Theory.

Urie Bronfenbrenner's Ecological Systems Theory (1979) aids in understanding how a child's development is affected by their social relationships and the world around them. This theory's focus is the social processes and culture of environments as well as the influence of collective behaviors within a society (Anderson, 1982). Bronfenbrenner (1979) believed that a person's development was affected by everything in their surrounding environment. He viewed the environment as intrinsically connected to the individuals within it and often used the term, ecological when referring to the environment (Rosa & Tudge, 2013). The ecology of human development encompasses the study of the shared accommodations between an active, developing person and the changing properties of the immediate settings in which the individual lives, as this process is affected by relations between these settings, and by the larger contexts in which the settings are rooted (Bronfenbrenner, 1979).

Ecological theory considers the entire ecological system and views all variables within the functional system of a school as instrumental components of organizational success that have the potential to influence student outcomes (Anderson, 1982; La Salle, 2013). In his Ecological Systems Theory (EST), Bronfenbrenner disaggregates a person's environment into five different

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levels. These levels are the microsystem, the mesosystem, the exosystem, the macrosystem, and the chronosystem (Bronfenbrenner, 1979).

**Microsystem.** The first and most influential level of EST, according to Bronfenbrenner (1979), is the microsystem. This level features a pattern of events, roles, and interpersonal relations experienced by an individual in an environment with particular physical and material traits (Bronfenbrenner, 1979). The microsystem is closest to the person and most impactful. As it relates to the educational environment, home and school are two examples of a student's microsystem, which include family, peers, and teachers.

A student's development is shaped by the activities that take place within a school. For example, participating in extracurricular activities may help an individual's physical development. Reading activities in the classroom may benefit language and vocabulary development. Likewise, social development and self-esteem may be negatively affected if bullying occurs without intervention. Considering relationships in the microsystem are bi-directional (i.e., dependent on each other), the way a person reacts to others in his microsystem will influence how they react and are treated in return. This explanation helps understand the importance of interactions between the student and teachers, peers, and family members.

**Mesosystem.** EST's next level is the mesosystem. This level considers the interactions between the different parts of the student's microsystem. The mesosystem explains how each part of an individual's microsystem is interconnected and dependent on each other. As each part interacts and asserts influence on the other, the mesosystem has an indirect impact on the individual student (Bronfenbrenner, 1989).

Consider the relationship that is established between a school leader, teachers and a student's parent. If parents and teachers are communicating regularly to identify problems the

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student may be having with schoolwork or social interactions, it may help the cognitive and social development of the child. Depending on the establishment of the relationship, working together or against one another, it will affect the development of their student. Epstein's (1983) research on the developmental impact of two-way communication and participation in decision-making by parents and teachers demonstrates the importance of the mesosystem. Accordingly, Gauvain and Cole (1993) explained family and school processes related to decision-making have a greater influence than those attributed to socioeconomic status or race.

**Exosystem.** The exosystem involves links between one or more social setting in which the developing person is not an active participant. However, events do occur that effect or are affected by what happens in the setting in which the developing person exists. Researchers have primarily identified three exosystems that indirectly affect the development of the student through the family, the school, and peer groups. These exosystems include the parent's workplace (Eckenrode & Gore, 1990), family social networks (Cochran, Lerner, Riley, Gunnarsson, & Henderson, 1990), and neighborhood and community groups (Pence, 1988). Although the developing student is not necessarily an active participant in this system, decisions made at this level still influences their development.

Consider a student's father who has lost his job. The loss of money for food and living expenses may affect the student's psychological and physical development. In this scenario, the student's experience at home is impacted by his father's experience at work. Although the student is not an active participant in the exosystem, decisions made still have an impact and influence on the student's development.

**Macrosystem.** The outermost level of a student's development in the EST is called the macrosystem. This level is comprised of cultural values, customs, and laws (Berk, Principe,

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Barr, & Berk, 2000). The macrosystem considers the overarching characteristics and social context of the microsystems, mesosystems, and exosystems in a given culture. In the macrosystem, particular references to the belief systems, bodies of knowledge, material resources, customs, lifestyles, opportunities, risks, and life options are embedded (Gauvain & Cole, 1993). The beliefs and cultural values of the student's macrosystem have a rippling effect and are influential throughout all levels of an individual's ecological system.

For instance, consider the impact of a culture that believed all parents—even those who could not afford it—should be responsible for paying for their child's education, rather than the government providing it without cost. Parents who lacked the financial ability to bear that responsibility would impact their child and affect the student's microsystem greatly. Families without the financial resources to pay for school could result in their child failing to learn to read, write, or have opportunities to interact with other students, ultimately impacting their cognitive and social development.

**Chronosystem.** The chronosystem encompasses a student's environment as it relates to dimensions in time. Considerations within the chronosystem can be external (e.g., parents divorcing) or internal (e.g., the physiological development of the student). Depending on the maturity and growth of a student, when in the developing stages, the student may respond differently to external changes and make more appropriate decisions on how those changes will affect them. Elder's (1974) study of children from the Great Depression questioned whether the loss of income, as a result of the depression, impacted the development of children. Elder's research suggested deprived and developing children displayed a greater desire to achieve. Gauvain & Cole (1993) also reference the loss of income as a driving force that causes a family to mobilize its own human resources. In this situation, each member of the family, including

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teenagers, are asked to take on new roles and responsibilities both within and outside the home in order to work together toward the common goal of getting the family on its feet. Through this experience, the children effectively learn the benefit of initiative, responsibility, and cooperation.

When the chronosystem was added to Bronfenbrenner's System Theory in 1993, he and other theorists began accepting that both a child's biology and the environment play a role in the change, growth, and perception as the student develops. It was through this extension that the role of genetics was considered in the ecological development of the child, often referred to as the bioecological model. Bronfenbrenner believed that heritability, gained through genetics, was highly influenced by the events and conditions of the environment. Specifically, he believed heritability could vary substantially as a direct function of the quality of the environments in which the developing child exists (Bronfenbrenner, 1994).

With consideration to Dewey's work on the educational environment and Bronfenbrenner's Ecological System Theory, one can deduce that student perceptions of school climate are affected by several bi-directional and interactive cultural factors across all levels of the ecological system, including the individual, home, school, and community characteristics. School climate studies have utilized Bronfenbrenner's Ecological Systems Theory to explain how each level of the ecological system influences the environment (Koth, Bradshaw, & Leaf, 2008). These studies recognize that the EST provides a model of interrelated social structures (i.e. family, peers, community, and school) that influence individual development and behaviors (Lahey et al., 2000; Stormshak, Bierman, Bruschi, Dodge, & Coie, 1999; Wright, Giammarino, & Parad, 1986). While some levels of the ecological model such as the exosystem and macrosystem are not the primary focus of this study, they are not forgotten. These systems are

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represented by the policies, norms, and practices of the schools in which the participants attend.

### **Social Learning Theory**

Just as Dewey (1938) paved a path for Bronfenbrenner's research, he also provided a framework for Albert Bandura's work known as the Social Learning Theory. Edman (1968) wrote that Dewey's philosophy influenced the transformation of education and everything associated with the modern trends. His emphasis on social learning and life experiences in the educational environment, directly relate to Bandura's research. Dewey believed that when children entered into an environment, they not only needed to be physically present but also introduced to the interests, purposes, information, skills, and practices of the culture by those who were most familiar to the environment (Edman, 1968). The importance of learning social and cultural aspects of a school's environment provided a theoretical construct for Albert Bandura's Social Learning Theory.

Social Learning Theory focuses on the learning that occurs within a social context. It considers that people learn from one another through observation, imitation, and modeling. Bandura believed individuals conceptualize and integrate the information they encounter in a variety of social experiences, such as exposure to peers, verbal discussions with those in their microsystem, and discipline encounters (Bandura, 1977a). Theorists explain that learning occurs when individuals directly experience the consequence of their actions (Skinner, 1938; Thorndike, 1898). However, Bandura further theorized that learning also occurs through observation. In fact, Bandura (1977a) purported most human behavior is acquired through observation. He suggests that individuals can learn a new behavior by observing the performances of others (i.e., models) and the consequences that result (Bandura, 1986). These acquired behaviors may



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include language and social skills such as observing verbal communications of others in the environment.

**Observational learning.** Bandura (1977a) suggests that behaviors are learned from the environment through the process of observational learning. Bandura's Social Learning Theory is primarily concerned with how people operate cognitively on their social experiences and with how these cognitive processes then come to influence their actions and development (Grusec, 1992). Children observe one another and the adults in their environment behaving in various ways and imitate what they see. As it relates to education and its environment, many influential models, such as parents, friends, teachers, and media outlets (Deaton, 2015), are constantly observed and being modeled by our students.

Learned behavior through observation is best illustrated through Bandura's (1961) famous Bobo doll experiments (Khan Academy Medicine, 2013). In this research study, children who observed an aggressive adult model punching and kicking a Bobo Doll subsequently became more aggressive compared to children who were not exposed to the aggression. While this study demonstrated that negative and inappropriate behaviors could be acquired and developed through observation, not all children displayed the negative behavior. Further experiments demonstrated that the children who initially remained unaggressive would perform the behavior they observed if prompted to do so.

While behaviorists believe learning must constitute a permanent change in behavior (Grusec, 1992), Bandura's work focused on and considered cognition as an important component of social learning theory. Bandura and Walters (1963) distinguished themselves by emphasizing the importance of observational learning and imitation. Additionally, they argued consequences experienced by a model could influence the behavior of the observer by deterring or promoting

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behavior. Thus, behaviors that might have previously been exhibited by the observer are suppressed even though the individual has never actually had to engage in the behavior and be punished (Grusec, 1992). In other words, Bandura believed individuals learn by observing the behavior of others as well as analyzing the outcomes of those behaviors. Also, Bandura and other social learning theorists believe that because individuals can learn through observation alone, it may or may not result in a change in performance or behavior. This phenomenon distinguished the difference between learning and performing behaviors, inspiring Bandura's Social Cognitive Theory (1986).

**Social cognitive theory.** According to Bandura (1986), Social Cognitive Theory requires a reciprocating relationship to exist between the observer and the environment. While the environment that one grows up in factors into the behavior, the personality attached to the individual is just as important. The behavior observed can change the way an individual thinks, which is identified as cognition. Therefore, Bandura proposed the environment, behavior, and cognition all work simultaneously to influence what is observed.

The observer plays an important role in social cognitive learning. Bandura (1986) identified four components that need to occur for effective observational learning to occur, which include attention, memory (or retention), imitation (reproduction), and motivation. Attention is dependent upon the observer's cognitive ability, relevance, preconception, and value placed on the behavior. The memory component is utilized by recalling a behavior and subsequent consequence that was observed for future use. Imitation refers to the observer putting the learned behavior into action, reproducing what was observed. It is important to note attention, memory, and imitation work together. Motivation to repeat what was learned will depend on the responses and consequences the observer received when reproducing the behavior.

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**Reinforcement.** In addition to cognitive awareness, Bandura explained the expectation of positive or negative reinforcement could have a major influence on the behaviors that an individual exhibits (Bandura, 1995). Thus, reinforcement becomes an important component of social learning, which can be external or internal. Reward and praise are given; therefore, they work as external reinforcements. Seeking approval from parents, teachers, and peers are examples of external reinforcements.

The emotion of satisfaction an individual encounters after receiving reward and praise is internal. For example, internal reinforcement can be positive emotions felt towards the approval from a parent, teacher or peer. In high achieving schools, positive reinforcement frequently occurs according to Rutter, Maughan, Mortimore, Ouston, & Smith (1979). Coleman (1961) reported that reinforcement through reward and praise of grade performance resulted in higher academic achievement, while Brookover, Beady, Flood, Schweitzer, & Wisenbaker (1979) found reinforcement through reward and praise of good behavior also improved academic outcomes. People guide their behaviors by observed outcomes or reinforcements. Furthermore, Bandura (1973) describes three ways reinforcement occurs: 1) the learner can be reinforced externally, 2) the learner can be reinforced by self, or 3) the learner is reinforced vicariously.

When students change their appearance to fit into a group and are accepted by the group, they are reinforced externally. This reinforcement influences behavior by creating expectations of similar outcomes in the future. Anticipating reinforcement from the group will increase the likelihood of the behavior to be repeated (Bandura, 1973).

Internal or self-regulated reinforcement occurs when the learner internally produces a consequence for the behavior. Through this type of self-regulation and censure, the learner can exercise some influence over their actions. Bandura (1973) describes this as self-reactive

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tendencies that reinforce the individual's anticipated behavior. He illustrates this type of reinforcement by describing the personal pride an individual may have when adopting a behavioral standard.

Vicarious reinforcement is the result of the learner observing the model perform a behavior and receive a consequence for an action. This observation by the learner causes a change in their behavior as a result of the consequence observed. Bandura, Ross, & Ross (1963), explain the observed outcome for the person demonstrating the behavior conveys information to the learner about the types of actions that are likely to be positively reinforced. This type of positive reinforcement causes the learner to mimic the same behavior. As reinforcement occurs externally or vicariously, self-efficacy forms.

**Self-efficacy.** Self-efficacy is one's belief and understanding of what abilities they can offer within the group (Ormrod, 1999). Erickson (1974), known for his research on psychosocial development, believed students gain real strength from wholehearted and consistent recognition of accomplishments that children find meaningful in their culture. The strength and confidence developed by a student may be referenced to Bandura's Self-Efficacy Theory. Bandura defined self-efficacy as one's belief in one's ability to succeed in specific situations or accomplish a task (Bandura, 1977b). He argued that self-efficacy plays a major role in how one approaches goals, tasks, and challenges (Bandura, 1988). Individuals who have high levels of self-efficacy will exert sufficient effort that, if well executed, leads to successful outcomes, whereas those with low self-efficacy are likely to cease effort early and fail (Stajkovic & Luthans, 1998).

Research findings indicate that people who have a high sense of perceived self-efficacy in a particular area think, feel, and act differently from those who perceive themselves as ineffective (Bandura, 1986). For this reason, students who doubt their capabilities shy away

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from difficult tasks, have low aspirations, and demonstrate a weak commitment to goals they do pursue. In demanding situations, these type of students may dwell on personal shortcomings, the difficulty of the task, and consequences of failure. Doubt, ultimately, undermines their effort and diverts attention from how to achieve success best, and instead, their focal concerns are personal failures. This pattern of thinking can lower one's self-efficacy and may produce high levels of anxiety and depression for the individual student (Bandura, 1988).

In contrast, people who are confident in their abilities approach difficult tasks as challenges rather than circumventing and avoiding the encounter (Bandura, 1988). Students that maintain high self-efficacy tend to set challenging goals and maintain strong commitments to accomplish the tasks at hand. In fact, they increase their efforts in the face of disappointment or failure (Bandura, 1988). Bandura (1988) believes individuals who acquire this high level of self-efficacy recover quickly and approach difficulties with the assurance that they can exercise control over them. This enhanced level of belief in one's self results in accomplishment for students who aspire to succeed and achieve in a school environment.

Bandura's work on social learning may provide information and insight to explain why schools with the more encouraging environment may be producing better outcomes for students compared to schools with more deprived environments. Social learning occurs when skills are acquired by an individual within a social group. Interactions within the group will determine the development of individual skills and perception of self. As people within this social group learn from one another through observation, imitation, and modeling, self-efficacy forms.

Social learning affects the school environment when students imitate and model behavior they learn from each other. Students are likely to pay attention and imitate peers they perceive to be similar to them. Also, peers respond to the behavior that is imitated with positive or negative

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reinforcement. If the student imitates a behavior and the consequence is rewarding, the student is more likely to continue performing the same behavior. Consequently, if the behavior is met with a negative response or action, the student is likely to avoid repeating the same action.

Using Bandura's theory, one can rationalize why a positive school climate, developed through positive influence and positive self-efficacy may result in a school climate that provides opportunities for students to succeed in high volumes.

### **Social Capital Theory**

In addition to the Ecological Systems Theory and Social Learning Theory, this study also recognizes the important role of Social Capital Theory when considering a school's environment. Many authors agree the first use of the term, social capital, was by L.J. Hanifan in 1916 when referring to the goodwill, fellowship, mutual sympathy, and social connections among a group of individuals and families (Felkins, 2002; MacGillivray & Walker, 2000; Woolcock & Narayan, 2000). And, although the concepts of social capital and social networks can be traced to the eighteenth and nineteenth centuries to philosophers such as Locke, Rousseau, and Weber (Adam & Rončević, 2003; Bankston and Zhou, 2002; Portes, 1998), this review of literature focuses on three modern-day theorists responsible for bringing social capital into its relevant state which include Pierre Bourdieu, James Coleman, and Robert Putnam.

According to Adam & Rončević (2003), Bourdieu is responsible for bringing the concept and term social capital into current discussions. Bourdieu's definition of social capital could be described as an expansive framework of symbolic capital and societal classes (Wallis, Crocker, & Schechter, 1998). He describes social capital as the accumulation of actual or potential resources which are linked to durable networks of institutionalized relationships of common threads. These networks provide each member with the support of shared ownership of capital,

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which entitles them to a form of intangible credit, which can be cashed in at a later time (Bourdieu, 1986). His beliefs on social capital are focused on the outcomes of individuals as compared to Coleman's approach which considers outcomes from the group, organization, and institution (Adam & Rončević, 2003).

Coleman (1988a) believes that social capital is defined by its function, representing a variety of different entities which have two characteristics in common. These characteristics deal with certain aspects of a social structure that facilitate the social actions of an individual or group of individuals within the structure. According to Coleman, social capital is a resource available to individuals, much like monetary capital. The basic components of social capital in Coleman's definition are the relationships available to individuals in all aspects of life including home, church, community, school, and work, among others. Perhaps Coleman's greatest contribution, according to Teachman, Paasch, & Carver (1997), was exploring how the productive nature of social capital might offset deficiencies in other capital that will be later reviewed such as human and cultural capital.

Building from Coleman's work, Robert Putnam (1993) defined social capital by referring to characteristics of social organizations such as trust, norms, and networks, which can improve the efficiency of society by facilitating cooperative actions. In his extensive research of civic connectedness and social capital, Putnam developed and relied on an instrument which included four indicators: (1) trust in people and institutions, (2) norms of reciprocity, (3) networks, and (4) membership in voluntary associations (Adam & Rončević, 2003). Unlike Bourdieu and Coleman, Putnam's analysis suggesting a decline in social capital—rather than its potential—has captured the attention and attracted many modern and progressive researchers such as Fukuyama (1995), Knack (2002), Woolcock & Narayan (2000), and Nahapiet & Ghoshal (1998).

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The research conducted by Bourdieu, Coleman, and Putnam has provided a basic understanding of the modern conceptualization of social capital. While all of the authors have contributed significantly to defining social capital theory, Coleman (1988a) is most responsible for connecting the theory and its application to the potential influence it has on the school's environment and its success. His research associates components of social capital that provide insight to strategies when considering a school's environment, which may increase student achievement and graduation rates (Bryk & Thum, 1989; Israel & Beaulieu, 2004).

**Forms of social capital.** According to Coleman (1990), people (i.e., whom he refers to as actors and their actions) are shaped by the environment. Important considerations for a functioning society and its economy include norms, interpersonal trust, social networks, and social organizations. Actors can utilize these considerations, or social capital, to achieve certain ends. Although attention for social capital in this study focusses on utilizing it as a resource for individuals, it is important to note that organizations can also be considered actors, known as corporate actors (Coleman, 1990). The relationships developed between corporate actors also constitute social capital.

To further understand the differences, Coleman (1988a) explains the characteristic of physical, human, and social capital. Physical capital is a tangible item or tool used to facilitate change. Human capital is less tangible, embedded in skills and crafts acquired by an individual, allowing them to act in different ways. Even less tangible, social capital is developed through changes in relationships among people that facilitate action. All three forms of capital facilitate production. An example of social capital and relations used as a resource for individuals is illustrated by Coleman (1988a) by explaining the obligations, expectations, and trustworthiness



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of a particular group and its ability to accomplish more compared to a group that is absent of the three characteristics.

Obligations, expectations, and trustworthiness are elements that exist within social capital, articulated by Coleman (1988a). If an individual (A) does something for another person (B) and trusts it will be reciprocated in the future, an expectation in (A) and an obligation in (B) is established. Obligation acts as a credit slip held by one person for the reciprocating performance of another. As long as trust has been placed correctly, social capital works most efficiently when an individual collects a large number of credit slips from others that can be cashed in when necessary. Without a high degree of trust among the individuals in a group that obligations will be repaid, the organization will fail, making social capital dependent on the trustworthiness of the social environment.

Information channels that are created by exchanges in social relations is another form of social capital. Information shared through the interactions of people who know each other is important in providing a foundation for action. Information channels provide a mechanism for the attainment of knowledge, leading to action. Depending on the trustworthiness of the individual who receives the information will determine the reactions. These social relations and exchanges do not come in the form of credit slips, but simply provide an opportunity for individuals to use one another as a source for information (Coleman, 1988a).

Another prevailing form of social capital is norms and sanctions. In safer, more secure environments, norms can provide justification and rationale for certain social actions by promoting some exchanges and discouraging others, such as crime. Rewards and consequences are established based on the accepted worth of the actions. This form of social capital is prevailing when individuals sacrifice personal interest and act in the best interest of the group,

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generally reinforced by social support, status, honor, and other acknowledgments (Coleman, 1988a). Coleman illustrates this type of norm with examples of strengthening families by guiding family members to act altruistically for the best interest of the family unit.

Closure and intergenerational closure are terms Coleman uses to explain social structure that facilitates social capital. Effective norms, which depend on these social structures, are created in an attempt to minimize undesirable external effects and promote positive ones (Coleman, 1988a). The lack of closure and connections within a social structure may prevent sanctions of negative outputs from an actor because the other actors in the network do not have a relationship and cannot combine forces. Structure with closure, therefore, provides more control over rewards and consequences. Intergenerational closure occurs between parent and child when the parents develop relationships with the parents of their child's friends, causing a multiple overlapping of interactions (Carbonaro, 1998).

**Social capital in education.** The most basic components of social capital are the abundance of interactions and relationships that exist among various people who are associated with one another, known as a social network (Coleman, 1988b). In an educational setting, these relationships and exchanges take several forms, including parent-student interactions, parent-school interactions, student-school interactions, student-student interactions and parent-parent interactions. In a school setting where high levels of trust are recognized by the individuals within the network, support and positive interactions are established (Israel, Beaulieu, & Hartless, 2009).

The concepts of social capital were introduced to the field of education by Coleman in 1988. In the study, he associated relationships between social capital components and dropout rates and explained all aspects of his definition in a description of attendance and expectations at

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Catholic schools. Closure of social networks is embedded in the scope of different types of interactions reinforced through attendance at a church community. Relationships tend to exist between the teachers and parents of students who attend Catholic schools. Informational channels are formed through the interactions of the parents and their children, their children's friends, and the parents of their children's friends. Community norms endorsed the Catholic school as an appropriate path for a foundational education. Traditional norms of authority supported by the faculty of the typical Catholic institution permit the school to enforce sanctions and consequences for unacceptable behavior. Further, the norms of the community establish high expectations of student academic performance. These expectations, along with trustworthiness, establish an obligation for the teachers to provide the most complete education available. In his conclusion, Coleman (1988b) found that students who attended Catholic schools tended to possess high levels of social capital.

For the purpose of his study, Coleman (1987; 1988b) set out to establish a relationship between social capital and dropout rates. He developed several conclusions by assessing the connection between family structure and a student's completion of school. Coleman concluded, students living with two parents are more likely to complete school than those living with only one parent. Also, as the number of siblings increases in the household, the amount of contact the child has with parents' decreases, leading to a higher chance of dropping out of school. Additionally, Coleman found that students with mothers who had high expectations for their child to attend college were more likely to graduate from high school than those that had mothers with no expectation. Finally, he concluded that children and families that move from one geographical location to another experienced a loss in social capital, decreasing the child's chances to complete high school and graduate.

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Braatz and Putnam (1996) also discussed concepts of social capital and the effects of social networks and norms in education. In their research, they found that many forms of social capital influence the educational process, including family, community engagement, parent-school engagement, and social capital within the school. Each of these social capital components amasses different qualities and quantities, which result in varying educational outcomes for individuals and school institutions, cited by the following researchers. The traditional nuclear family, youth organizations, and parents involved in students' education have all been linked to positive educational outcomes (Coleman, 1987; Heath & McLaughlin, 1993; Henderson & Berla, 1997). Additionally, research has shown schools which are organized with a community-based approach are effective in producing more positive and successful educational experiences (Lee, Smith, & Croninger, 1997).

Social Capital Theory has been applied at various levels of the ecological system. The consensus in contemporary research suggests social capital is recognizable in all levels of the ecological system, including the micro (individual), meso (group), and macro (societal) levels (Baum & Ziersch, 2003; Glaeser, Laibson, & Sacerdote, 2002; Newton, 2001). This consensus along with Bourdieu's, Coleman's, and Putnam's views suggests social capital focuses on individuals and their personal relationships, and considers shared norms, values, attitudes, and beliefs that influence people towards mutually beneficial action. Further, Nummela, Sulander, Karisto, & Uutela (2009), concluded that an organization (school) exhibiting high levels of social capital typically encounters a high level of engagement, social participation, social trust, institutional trust, and interpersonal reciprocity.

Ecological systems theory, social learning theory, and social capital all offer insight into why schools with positive climates and cultures may function at higher levels regarding student

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success and achievement. For this study, success is defined by graduation rates. A school with a positive climate and culture may be more likely to meet the needs of its students as outlined by Bronfenbrenner, Bandura, and Coleman.

### **Chapter III**

#### **Methodology**

The purpose of this chapter is to provide the method by which this study investigated whether there was a relationship between school climate and graduation rates for public high schools in the state of Georgia. Like most states, Georgia legislatures have increasingly placed more responsibilities on schools to graduate students on time. For this study, "on time" refers to students who graduate within a four-year cohort, beginning when students enter the ninth grade. The Georgia Department of Education has also employed a rating system to determine the climate of schools.

In Georgia, the yearly progress of a school is measured, or scored, using the College and Career Ready Performance Index (CCRPI). CCRPI accounts for several achievement components, including, but not limited to, high school graduation rates. The four-year cohort graduation rate is calculated by taking the number of students who graduate in four years with a regular high school diploma divided by the number of students who form the adjusted cohort for the graduating class. From the beginning of 9<sup>th</sup> grade, students who enter high school for the first time form a cohort that is subsequently adjusted by adding any students who transfer into the cohort over the next four years. Also, students who transfer out, immigrate to another country, or pass away during the four year period are removed from the cohort (Georgia Department of Education, 2018).

School climate is defined as the stakeholder's perceived belief about their respective school in reference to the quality and character of school life, influenced by the norms, goals, values, interpersonal relationships, instructional practices, and organizational structures within the school ("Our Approach - National School Climate Center," 2018). It is important to

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understand the school climate rating is not included in CCRPI calculations. This rating is provided for informational purposes to support a complete view of the school's performance ("School Climate," 2018).

### **Population**

The data analyzed included randomly selected schools out of the population of 389 public high schools in Georgia who received star climate ratings and College and Career Ready Performance Index scores, which produced graduation rates and achievement scores. Formulas for measuring climate ratings and CCRPI scores were developed and accepted by the Georgia Department of Education. Access to these datasets was acquired from the Georgia Department of Education.

### **Sample**

To identify an adequate sample size, a power analysis (Cohen, 1988), was conducted. Power analysis combines and uses the independent variable and covariates, the level of significance, the effect size, and the specified power to determine the needed sample size to conduct an appropriate study. For this particular study involving ten covariates and one independent variable, a medium effect size ( $f^2 = .15$ ), a defined level of significance ( $\alpha = .05$ ), and specific power level ( $beta = .80$ ), the power analysis identified 122 as the recommended number of participants.

Participants included randomly selected, Georgia public high schools that received annual star ratings based on a climate formula developed by the GaDOE, including the Assessment and Accountability Division, and in partnership with the Georgia Department of Public Health and Georgia State University ("School Climate," 2018). Approximately 389 public high schools in Georgia participated in the annual climate rating survey and were used to represent the

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population. From the power analysis result, each high school for the study was chosen randomly, and each school had an equal opportunity of being included in the sample (N=125).

### **Instrumentation**

The instrument chosen for this study was the Star Rating for School Climate. The star rating calculation consists of surveys, student discipline data, safe learning environment (embedded in the surveys), and school-wide attendance records. The surveys utilized in this instrument were the Georgia Student Health Survey 2.0 (GSHS 2.0), the Georgia School Personnel Survey (GSPS), and the Georgia Parent Survey (GPS). These surveys are anonymous, statewide questionnaires developed by multiple divisions within the GaDOE, including the Assessment and Accountability Division, and in partnership with the Georgia Department of Public Health and Georgia State University ("School Climate," 2018). In addition, these surveys were created by the Georgia Department of Education in collaboration with Tamika La Salle, Ph.D., The University of Connecticut, and Joel Meyers, Ph.D., The Center for School Safety, School Climate, and Classroom Management at Georgia State University ("Georgia Student Health Survey 2.0," 2018).

The surveys used a Likert-type Scale to measure responses. School climate and safety were the common construct/factor found throughout each survey. The outcomes measured included: 1) school climate, 2) parent involvement, 3) drug and alcohol use, 4) student information, 5) age of onset, 6) perceptions of risk/harm, 7) peer/adult disapproval, and 8) mental health. School climate subcategories within each survey included: 1) school connectedness, 2) peer social support, 3) adult social support, 4) cultural acceptance, 5) social/civic learning, 6) physical environment, 7) school safety, and 8) peer victimization.



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By examining the 15 principles of constructing a questionnaire instrument (Bolarinwa, 2015), all three surveys applied are appropriate for measuring high school climate. The goal of the surveys was to understand the perspectives of Georgia public high school students, parents, and personnel about variables related to their perception of the school climate at each of their respective high schools in Georgia. Upon inspection, the questionnaires provide precise data about the feelings and thoughts of the participants and use multiple items to measure abstract constructs.

The priority was to ensure the questionnaire items match the research objectives. The items on the GSHS 2.0, the GSPS, and the GPS did, indeed, match the objectives to determine the climate of a school. Also, upon examination, the items on the instruments selected use natural and familiar language that is understandable for its participants (Bolarinwa, 2015). In this case, the developers of this instrument have taken the time to understand who the participants are that will be taking the survey.

These surveys, used to determine climate ratings in Georgia schools, were developed to keep the items on the questionnaire clear, precise and relatively short. Thousands of students, parents, and school personnel participated in these surveys. The goal is to ensure all participants understand and interpret the questions the same way. Each item has been developed to avoid double-barreled questions and double negatives. The items have been constructed to keep issues separate from each other to avoid confusion.

All three surveys contain embedded school climate items which assess student perceptions of school climate. The student survey, which uses 121 closed-ended questions, forces the participants to choose from a set of predetermined responses. The GSHS 2.0 also meets other considerations such as the development of items that are mutually exclusive,

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categories that are exhaustive, the use of a rating scale, and proper organization. The surveys have been piloted and revised over the years to provide the most accurate information when determining a student's perspective of high school climate (La Salle & Freeman, 2014).

In addition to the surveys, the Star Rating for School Climate also considers the discipline and attendance rates for each of the respective school ratings. Student discipline is reported to the state and derived from the Student Record Discipline Data at each school. In the same way, attendance data is collected from the Student Record Attendance Data and utilized in the formula when determining the school's Star Rating.

### **Psychometrics**

Experts in the field were used to collaborate and develop these surveys to establish content validity and reliability. Studies have determined these surveys are valid and reliable instruments used to measure school climate (La Salle & Freeman, 2014; McGiboney, 2016). Research outlines six significant categories of school climate and thirteen dimensions that contribute to the community's overall perception of the climate (Thapa et al., 2013). The surveys used in this study have been constructed to address all thirteen dimensions of school climate and establish "construct" validity. These dimensions include: 1) Rules and Norms, 2) Physical Security, 3) Social-Emotional Security, 4) Support for Learning, 5) Social and Civic Learning, 6) Respect for Diversity, 7) Social Support (adult), 8) Social Support (students), 9) School Connectedness-Engagement, 10) Physical Surroundings, 11) Social Media, 12) Leadership, 13) Professional Relationships ("Our Approach - National School Climate Center," 2018).

Reliability of the GSHS 2.0, the GSPS, and the GPS – Repeated measurements have determined, on an annual basis, that these surveys produce the same results when used with the

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same respondents. Internal consistency reliability has been calculated using split-half reliability measures. The surveys use a variety of statements/questions to measure the same thing. Strong relations and correlations are used to support internal consistency.

### Variables

**Covariates.** Previous research revealed several variables as covariates to control for high school graduation rates (Battin-Pearson et al., 2000; Hammond et al., 2007). To reduce the probability of Type I and Type II error (Huck, 2012), this study utilized covariates. Without the use of covariates, misinterpretation of the relationship between the dependent and independent variables could exist, resulting in a false null hypothesis not to be rejected.

To account for discrepancies in climate ratings found in Georgia public high schools affecting graduation rates, there were variables used as controls to assist in determining the impact of school climate on graduation rates. An extensive review of literature identified the following as relevant covariates that impact high school graduation rates: a) student achievement in ELA and math (Bowers et al., 2013; National Center for Education Statistics, 1992), b) school level SES (Coalition for Juvenile Justice, 2001; Hammond et al., 2007; Kaufman, 2002), c) school size (Alspaugh, 1998; Byrk & Thum, 1989; McNeal, 1995), d) student race/ethnicity percentages (Battin-Pearson et al., 2000; Griffin, 2002; National Center for Education Statistics, 1992), e) school ESOL population (Sheng et al., 2011; Smink & Schargel 2004), f) school SPED population (Suh & Suh, 2007), g) location (National Center for Education Statistics, 1992; Smink & Schargel 2004), h) community crime rate (Alspaugh, 1998; Wilson, 1996), and i) community unemployment rate (Christle et al., 2007; Wilson, 1996).

Student achievement was measured using the pass percentages of the End-of-Course exams in ninth grade Algebra and Ninth Grade Literature published in the CCRPI report for each

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high school selected. Algebra and Ninth Grade Literature were selected based on research that indicates students who historically have low achievement in math and English are at risk of dropping out of school (National Center for Education Statistics, 1992). Specifically, the Algebra and Ninth Grade Literature End-of-Course Exams are the earliest state assessment indicators for high school students in Georgia.

Socioeconomic status (SES) was measured using the percentage of free and reduce meals at each of the school selected. The SES percentage of a high school in Georgia was calculated by dividing the number of students eligible to receive free or reduced meals (reported annually by the Georgia Department of Education in the October Nutrition Count) by the total school enrollment count. Students may qualify for free and reduced meals if the household is receiving assistance from the Supplemental Nutrition Assistance Program (SNAP) or Temporary Assistance for Needy Families (TANF). Other qualifications include: 1) children that are fostered, 2) participates in their school's Head Start program, 3) are homeless, migrants, or a runaways, 4) the household meets the income eligibility guidelines, or 5) the household participates in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) (United States Department of Agriculture, 2017).

The size of the high school was determined using real student enrollment numbers. In Georgia, the Department of Education collects enrollment counts from each school system periodically throughout the year. The collection of enrollment data is known as an FTE (Full-Time Equivalent) count. Enrollment figures for each high school are based on FTE counts that are reported in October and March of the same school year.

School demographics, English Language Learner populations, and Special Education populations was also collected using FTE datasets. For this study, school demographics, in term

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of racial ethnicity, was determined using the percentage of white students compared to all minority students. These percentages were acquired from the FTE counts published by the GaDOE in October and March of the same school year. The percentage of students who were identified as English Language Learners (ELL) was based on information from student records. The Georgia Department of Education calculates this percentage from the count of students identified as ELL divided by the total enrollment of students at each school. FTE counts were also utilized to determine the percentage of students with disabilities at each of the high schools in Georgia. The December FTE was used as the official count to identify the number of special education students being served divided by the total enrollment at each school.

Using codes from the Governor's Office of Student Achievement, the location of each high school was identified based on one of three categories: 1) urban, 2) suburban, and 3) rural. Urban locations are determined by very high population densities, located inside a principal city. Suburban areas have lower population densities and are located outside a principal city and inside an urbanized area. Rural areas are located away from crowded communities and have much lower population densities, located 5 or more miles outside urbanized areas (Governor's Office of Student Achievement, 2018).

Community unemployment and crime rates were determined using statistical percentages from the Georgia Department of Labor and the Georgia Bureau of Investigation. The unemployment rate was determined by the number of unemployed persons divided by the workforce in an identified area. The crime rate was calculated by dividing the number of reported crimes by the total population. Crime rate includes offenses that are serious and more likely to be investigated, known as Index Crimes. These offenses include murder, rape, robbery, aggravated assault, burglary, larceny, theft, and arson.

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**Independent variable.** The independent variable manipulated in this study was the school climate. School climate is defined as the stakeholder's perceived belief about their respective school in reference to the quality and character of school life, influenced by the norms, goals, values, interpersonal relationships, instructional practices, and organizational structures within the school ("National School Climate Center: School Climate," 2017). In Georgia, a school's climate is determined by using a 5-star rating system which considers surveys, attendance, and discipline at each of the respective schools. As an independent variable, this study attempted to identify if there was a significant impact on graduation rates among public high schools with different climate ratings.

**Dependent variable.** The dependent variable for this study was public high school graduation rates, determined by the Georgia Department of Education. The graduation rate was calculated by taking the total number of graduates divided by the total number of students in the four-year cohort at each school. Multiple regression analysis, computed by SPSS, was utilized to determine whether there was a significant relationship in the graduation rates and school climate, opposed to other control variables that impact a student's completion of high school. Star Climate Ratings were determined by anonymous, statewide survey instruments, student discipline data, safe learning environment measurements (embedded in the surveys), and school-wide attendance records.

### **Data Analysis**

The data obtained in this study was analyzed using an ordinary least squares (OLS) multiple regression procedure with a simultaneous order of entry for variables. Analysis was conducted using the latest version of SPSS and Microsoft Office Excel. The minimum level of statistical significance was determined at  $p < 0.05$ . Using a variety of control variables, the

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multiple regression formula provided variance and built a stronger argument for any significant relationship between the dependent and independent variable.

Mentioned in the previous chapter, research has studied the correlation between school climate and student achievement (Ali & Siddiqui, 2016; Wang & Degol, 2016). However, analyzing the connection between the high school's climate and graduation rate, negatively or positively, when controlling for other variables had not been thoroughly studied. The following question was developed to shape this study:

### **Quantitative Research Question and Null Hypothesis:**

1. Is there a relationship between school climate and graduation rates for public high schools in the state of Georgia when potential covariates have been controlled?

H<sub>0</sub>: There is no significant relationship between public high school climate ratings (independent) and graduation rates (dependent) in the state of Georgia when potential covariates have been controlled.

## Chapter IV

### Results

#### Descriptive Statistics

The population for this study was all public high schools in the state of Georgia who received star climate ratings and College and Career Ready Performance Index scores, which produce graduation rates and achievement scores. Formulas for measuring climate ratings and CCRPI scores were developed and accepted by the Georgia Department of Education. It is important to note that high schools that did not participate in the Georgia Student Health Survey 2.0 (GSHS 2.0) or End-of-Course (EOC) state assessments for Algebra and 9<sup>th</sup> Grade Literature in 2017 were disqualified from the study.

By applying a power analysis developed by Cohen (1988) an appropriate sample size was determined for this study. Power analysis combines and uses the independent variable and covariates, the level of significance, the effect size, and the specified power to determine the needed sample size to avoid potential type-1 or type-2 error within a study. For this particular study involving ten covariates and one independent variable, a medium effect size ( $f^2 = .15$ ), a defined level of significance ( $\alpha = .05$ ), and specific power level ( $\beta = .80$ ), the power analysis identified 122 as the recommended number of participants.

Participating Georgia high schools were randomly selected for this study by utilizing a systematic random sampling technique. The technique employed a “3 by 2” pattern by which the first school was selected at random followed by the selection of every third school and second school from the alphabetical list until 125 schools were designated. If a particular school had not participated in the 2017 climate survey or state assessments in Algebra and 9<sup>th</sup> Grade Literature, the next high school in alphabetical order was chosen. In all, 21 schools were omitted from the



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study during the selection process to acquire a sample size of 125 public high schools in Georgia that met all requirements.

A review of literature identified the following school and community variables that have the potential to impact a high school's graduation rates: a) student achievement in English Language Arts (ELA) and math (Bowers et al., 2013; National Center for Education Statistics, 1992), b) school level SES (Coalition for Juvenile Justice, 2001; Hammond et al., 2007; Kaufman, 2002), c) school size (Alspaugh, 1998; Byrk & Thum, 1989; McNeal, 1995), d) student race/ethnicity percentages (Battin-Pearson et al., 2000; Griffin, 2002; National Center for Education Statistics, 1992), e) school English to speakers of other languages (ESOL) population (Sheng et al., 2011; Smink & Schargel 2004), f) school special education (SPED) population (Suh & Suh, 2007), g) location (National Center for Education Statistics, 1992; Smink & Schargel 2004), h) community crime rate (Alspaugh, 1998; Wilson, 1996), and i) community unemployment rate (Christle et al., 2007; Wilson, 1996). The datasets for each of these variables were acquired from the following state departments and agencies: a) Georgia Department of Education, b) Governor's Office of Student Achievement, c) Georgia Department of Labor, and d) Georgia Bureau of Investigation.

The majority of the variables manipulated in this study were continuous variables and did not require dummy coding. Location (i.e., rural, suburban, urban) was identified as a categorical variable and required dummy coding to perform the analysis (i.e., Rural=0, Suburban=1, and Urban=2). To generate descriptive statistics and inferential statistics, the statistical software used was Statistical Package for the Social Sciences (SPSS). Table 4.1 provides a summary of descriptive statistics associated with school accountability measures.

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The average school climate rating from the participating schools (N = 125) in this study was 83.67 on a scale of 0 to 100 (see Table 4.1). Similarly, the average Georgia high school graduation rate in this population sample was 85.93 (see Table 4.1). Additionally, the average minimum proficiency (i.e., developing learner) 9<sup>th</sup> Grade Literature end-of-course percentage score for these high schools was 80.54, while the average minimum proficiency (i.e., developing learner) Algebra end-of-course percentage score was 62.86 (see Table 4.1).

Table 4.1

### *School Accountability Measures*

	N	Range	Minimum	Maximum	Mean	SD
Climate	125	28.00	66.70	94.70	83.67	5.12
Grad Rate	125	35.66	64.34	100.00	85.93	6.87
9 <sup>th</sup> Lit. EOC	125	57.10	42.90	100.00	80.54	11.18
Alg. EOC	125	82.80	13.20	96.00	62.86	19.48

Note. Graduation rates are based on four-year cohort students that entered high school in the fall of 2013. School climate scores measures are based on a 100 point scale.

The school climate ratings had a range of 28.00 with a minimum of 66.7 and maximum of 94.7 (see Table 4.1). In addition, the graduation rate had a range of 35.66 percent with a minimum of 64.34 percent and maximum of 100 percent (see Table 4.1). Correspondingly, the 9<sup>th</sup> Grade Literature End-of-Course Test (EOC) percent passing had a range of 57.10 with a minimum of 42.90 and maximum of 100, while the Algebra EOC percent passing had a range of 82.80 with a minimum of 13.20 and a maximum of 96.00 (see Table 4.1).

The average percentage of white students from the participating schools (N = 125) in this study was 45.36 (see Table 4.2). Additionally, the average percentage of socioeconomic disadvantaged students (SES) as defined by percentage of students on free or reduced priced

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lunch in this sample was 61.33 (see Table 4.2). Also, the average percentage of students identified with disabilities was 11.76, and the average percentage of students identified as ESOL was 1.51 (see Table 4.2). Lastly, the actual number of the students attending high school in this study had a mean of 1361.78 (see Table 4.2).

Table 4.2

### *School Characteristics*

	N	Range	Minimum	Maximum	Mean	SD
White %	125	98	0	98	45.36	28.68
SES %	125	94	6.0	100	61.33	27.66
SWD %	125	12.10	6.4	18.50	11.76	2.49
ESOL %	125	14.40	0	14.40	1.51	2.21
School Size	125	3,535	224	3,759	1,361.78	718.19

Note. All percentages student population data were sourced from the 2017 Georgia Department of Education FTE counts.

The school populations of white student percentages in this study had a range of 98 with a minimum of 0 and maximum of 98 (see Table 4.2). In addition, socioeconomic disadvantaged students in the selected high schools had a range of 94 with a minimum of 6.0 percent and maximum of 100 percent (see Table 4.2). Furthermore, the percentage of students identified with disabilities in the sample had a range of 12.10 with a minimum of 6.4 percent and maximum of 18.50 percent, while the percentage of ESOL students had a range of 14.40 with a minimum of 0 percent and a maximum of 14.40 percent (see Table 4.2). Finally, total student population size in this study had a range of 3,535 with a minimum of 224 students and a maximum of 3,759 students (see Table 4.2).

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The average crime rate in the communities of participating schools (N = 125) in this study was 2.86 percent, while the average unemployment rate in the communities for this sample was 5.01 percent (see Table 4.3). Further, the community crime rates had a range of 5.0 with a minimum of .10 percent and maximum of 5.10 percent. Also, the community unemployment rates had a range of 3.90 with a minimum of 3.70 percent and a maximum of 7.60 percent (see Table 4.3).

Table 4.3

### *Community Characteristics*

	N	Range	Minimum	Maximum	Mean	SD
Crime	125	5.00	.10	5.10	2.56	1.34
Unemployment	125	3.90	3.70	7.60	5.01	.84

Note. Crime rate was sourced from the Georgia Bureau of Investigation using the 2017 Crime Index. Unemployment rate was sourced from the 2017 Georgia Department of Labor statistics.

The location of each high school in this study was identified based on one of three categories: 1) urban, 2) suburban, and 3) rural. Urban locations were determined by very high population densities, located inside a principal city. Suburban areas had lower population densities and were located outside a principal city and inside an urbanized area. Rural areas were located away from crowded communities, had much lower population densities, and were located 5 or more miles outside urbanized areas (Governor's Office of Student Achievement, 2018).

Of the high schools selected for this study (N = 125), 52 percent were located in rural settings with a frequency of 65 (see Table 4.4). Additionally, 29.6 percent of the high schools were located in suburban settings with a frequency of 37 (see Table 4.4). Lastly, 18 percent of the high schools were located in urban settings with a frequency of 23 (see Table 4.4).

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Table 4.4

*Location of High Schools*

	Frequency	Percent	Valid Percent	Cumulative Percent
Rural	65	52.0	52.0	52.0
Suburban	37	29.6	29.6	81.6
Urban	23	18.4	18.4	100.0
Total	125	100.0	100.0	

*Notes.* Locations were identified by the Governor's Office of Student Achievement.

The focus of this study was to explore the relationship between high school graduation and school climate along with other outcome variables as controls. As such, significant bivariate correlations (i.e.,  $p \leq 0.05$ ,  $p \leq 0.01$ ) between all variables are discussed. Table 4.5 reflects the Pearson correlation of the independent, dependent, and control variables used in the regression analysis within this study. Of the 12 variables used in the regression analysis, only 2 did not reflect significant correlations with graduation rates (i.e., size of student population, and community unemployment rate; see Table 4.5).

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Table 4.5

## *Correlation of All Variables*

	1	2	3	4	5	6	7	8	9	10	11	12
Climate	1											
Grad	.373**	1										
9 <sup>th</sup>	.639**	.527**	1									
Alg	.655**	.557**	.790**	1								
White	.500**	.501**	.547**	.605**	1							
SES	-.644**	-.472**	-.738**	-.721**	-.580**	1						
SWD	-.314**	-.269**	-.460**	-.383**	-.218*	.354**	1					
ESOL	.055	-.226*	-.021	.041	-.226*	.049	-.118	1				
Locale	-.229*	-.270**	-.232**	-.315**	-.565**	.122	.108	.175	1			
Size	.311**	.003	.419**	.349**	-.066	-.517**	-.220*	.306**	.271**	1		
Crime	-.234**	-.238**	-.360**	-.439**	-.484**	.273**	.166	-.131	.582**	-.019	1	
Unemp	-.365**	.065	-.398**	-.341**	-.237**	.555**	.176*	-.243**	-.103	-.557**	.228*	1

Note. \*\*Correlation is significant at the 0.01 level (2-tailed).

\*Correlation is significant at the 0.05 level (2-tailed).

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Nine variables had a significant correlation with graduation rates, beginning with school climate. The correlation coefficient describing school climate was positive ( $r = .373, p < 0.01$ ; see Table 4.5). Additionally, 9<sup>th</sup> Grade Literature EOC pass percentages were positive ( $r = .527, p < 0.01$ ; see Table 4.5), Algebra EOC pass percentages were positive ( $r = .557, p < 0.01$ ; see Table 4.5), and percentage of white student population was positive ( $r = .501, p < 0.01$ ; see Table 4.5). This suggests that as the school climate ratings, EOC assessments, and the percentage of white student populations increased, graduation rates would increase as well. The correlation coefficient describing four other variables were negative, which included the percent of socioeconomic disadvantaged students ( $r = -.472, p < 0.01$ ; see Table 4.5), percent of students with disabilities ( $r = -.269, p < 0.01$ ; see Table 4.5), percent of ESOL students ( $r = -.226, p < 0.01$ ; see Table 4.5), and community crime rate ( $r = -.238, p < 0.01$ ; see Table 4.5). Correspondingly, this proposes as the percentages of disadvantaged students, students with disabilities, ESOL students, and crime rates increase, graduation rates will decrease.

In addition, school climate also positively correlated with 9<sup>th</sup> Grade Literature EOC pass percentages ( $r = .639, p < 0.01$ ; see Table 4.5), Algebra EOC pass percentages ( $r = .655, p < 0.01$ ; see Table 4.5), percentage of white student population ( $r = .500, p < 0.01$ ; see Table 4.5), and size of the student population ( $r = .311, p < 0.01$ ; see Table 4.5). This indicated that as assessment scores and the percent of white students in a school increased, school climate ratings would also increase. Table 4.5 shows a negative correlations between school climate and the percent of socioeconomic disadvantaged students ( $r = -.644, p < 0.01$ ; see Table 4.5), percent of students with disabilities ( $r = -.314, p < 0.01$ ; see Table 4.5), community crime rate ( $r = -.234, p < 0.01$ ; see Table 4.5), and the community unemployment rate ( $r = -.365, p < 0.01$ ; see Table 4.5). As such, this suggests that as these variables increase, school climate ratings will decrease.

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9<sup>th</sup> Grade Literature and Algebra EOC assessments had similar correlation seen in Table 4.5. Both assessments represented positive correlations with each other ( $r = .790, p < 0.01$ ; see Table 4.5). In addition, 9<sup>th</sup> Grade Literature EOC pass percentages also correlated positively with the percentage of white student population ( $r = .547, p < 0.01$ ; see Table 4.5) and size of the student population ( $r = .419, p < 0.01$ ; see Table 4.5). The percent of socioeconomic disadvantaged students ( $r = -.738, p < 0.01$ ; see Table 4.5), percent of students with disabilities ( $r = -.460, p < 0.01$ ; see Table 4.5), community crime rate ( $r = -.360, p < 0.01$ ; see Table 4.5), and the community unemployment rate ( $r = -.398, p < 0.01$ ; see Table 4.5) all negatively correlated with 9<sup>th</sup> Grade Literature EOC pass percentages. Likewise, Algebra EOC pass percentages correlated positively with the percentage of white student population ( $r = .605, p < 0.01$ ; see Table 4.5) and size of the student population ( $r = .349, p < 0.01$ ; see Table 4.5). Once more, the percent of socioeconomic disadvantaged students ( $r = -.721, p < 0.01$ ; see Table 4.5), percent of students with disabilities ( $r = -.383, p < 0.01$ ; see Table 4.5), community crime rate ( $r = -.439, p < 0.01$ ; see Table 4.5), and the community unemployment rate ( $r = -.341, p < 0.01$ ; see Table 4.5) all negatively correlated with 9<sup>th</sup> Grade Literature EOC pass percentages. These findings suggests that as the percentage of the white student population and size of the school increased, assessment scores would increase. Not surprising, as the percentages of disadvantaged students, students with disabilities, crime rate and unemployment rates increased in a school or community, the EOC pass percentages decreased.

The percent of white student population in a high school had a negative correlation with the percent of socioeconomic disadvantaged students ( $r = -.580, p < 0.01$ ; see Table 4.5), percent of students with disabilities ( $r = -.218, p < 0.05$ ; see Table 4.5), percent of ESOL students ( $r = -.226, p < 0.05$ ; see Table 4.5), community crime rate ( $r = -.484, p < 0.01$ ; see Table 4.5), and the



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community unemployment rate ( $r = -.237, p < 0.01$ ; see Table 4.5). This indicated that as the percentage of white students increased in a school, the percentage of disadvantaged students, students with disabilities, ESOL student population, community crime rate, and community unemployment rate decreased.

The percent of disadvantaged students in a high school positively correlated with students with disabilities ( $r = .354, p < 0.01$ ), community crime rates ( $r = .273, p < 0.01$ ), and community unemployment rates ( $r = .555, p < 0.01$ ). As expected, this specifies that as the as the percent of disadvantaged students in a high school increased, the percentage of students with disabilities, crime rates, and unemployment rates increased as well. Additionally, Table 4.5 shows a negative correlation between the percent of disadvantaged students and size of student population ( $r = -.517, p < 0.01$ ; see Table 4.5). In addition, school size also negatively correlates with the population of students with disabilities ( $r = -.220, p < 0.05$ ; see Table 4.5). This revealed that as the size of the total student population increased, the percent of disadvantaged students and students with disabilities decreased. Also, as the percent of students with disabilities increased in a school, the community unemployment rate increased ( $r = .176, p < 0.05$ ; see Table 4.5). Interestingly, as the percentage of ESOL students in a school increased, the community unemployment rate decreased ( $r = -.243, p < 0.01$ ; see Table 4.5). Furthermore, as the ESOL population increased, the total student population in high school increased ( $r = .306, p < 0.01$ ; see Table 4.5). Lastly, Table 4.5 shows school size had a negative correlation with community unemployment rates ( $r = -.557, p < 0.01$ ; see Table 4.5) and a positive correlation with community crime rates ( $r = .228, p < 0.05$ ; see Table 4.5). Interestingly, as the total student population increased, community unemployment rates decreased. However, as the student population increased, the community crime rate increased as well.

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An accepted variance inflation factor (VIF) of less than 3.0 was used to avoid multicollinearity (Mertler & Vannatta, 2013), a key assumption when utilizing multiple regression analysis. Variables that exceeded the VIF of 3.0 were removed or strategically left in the analysis based on empirical recommendations. As such, 9<sup>th</sup> Grade Literature EOC and white student population percentages were removed (see Table 4.6 and Table 4.8). Although studies have shown that students who historically have low achievement in ELA are at risk of not graduating from high school (National Center for Educational Statistics, 1992), math has predominately been used to determine academic success and essentially measures the same outcomes (Lee, Burkam, Chow-Hoy, Smerdon, & Goverdt, 1998). Similarly, while research suggest disparities in high school graduation success according to racial ethnicities (Battin-Pearson et al., 2001), Hammond et al. (2007) determined that 83% of the researched-based studies identify low socioeconomic status as a significant contributor for predicting high school dropouts.

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Table 4.6

*Multi-collinearity Diagnostic Table*

Model	Tolerance	VIF
Climate	.467	2.143
9 <sup>th</sup> Lit EOC	.277	3.611
Algebra EOC	.270	3.704
White %	.311	3.219
SES %	.236	4.242
SWD %	.764	1.308
ESOL %	.692	1.445
Location	.440	2.274
School Size	.408	2.451
Crime Rate	.490	2.042
Unemployment Rate	.509	1.966

Note. Variance Inflation Factor (VIF) of less than 3.0 utilized to avoid multi-collinearity. See 9<sup>th</sup> Grade Literature EOC, Algebra EOC, White %, and SES %.

### **Inferential Statistics**

An ordinary least squares (OLS) multiple linear regression was used to analyze the data obtained in this study. In doing so, the dependent variable (high school graduation rates) obtained from the Georgia Department of Education was regressed on the independent and control variables. As such, the aforementioned analysis was used to test the following null hypothesis.

H<sub>0</sub>: There is no significant relationship between public high school climate ratings (independent) and graduation rates (dependent) in the state of Georgia when potential covariates have been controlled.

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The criterion used to accept or reject the null hypothesis is determined by an alpha of .05 ( $\alpha = 0.05$ ). The first step in the regression analysis was to determine how much variance was accounted for when using the variables identified (see Table 4.7). High school graduation rates was the dependent variable used in this analysis. This percentage was determined by the Georgia Department of Education based on four-year cohort students that entered high school in the fall of 2013. With the exception of 9<sup>th</sup> Grade Literature EOC and white student population percentages, all variables were entered simultaneously in the regression equation model. When all covariates and the dependent variable were introduced into the regression equation, roughly 49 percent ( $R^2 = .487$ ) of variance associated with graduations rates was accounted (see Table 4.7).

Table 4.7

### *Multiple Regression Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.698 <sup>a</sup>	.487	.446	5.113907

Note. a. Predictor: (Constant), Unemployment Rate, Location, SWD %, ESOL %, Climate, School Size, Crime Rate, Algebra EOC, SES %.

The next and final step of the regression analysis was to determine the impact of the individual variables on the dependent variable (i.e., graduation rates). While collinearity statistics have SES % above 3.0 at 3.526, previous literature consistently identified socioeconomic status as an important indicator of graduation rates (Hammond et al., 2007) and is validated at a significance level of .001 ( $b = .418$ ) (see Table 4.8). The effect of the regression analysis when including the independent variable, school climate rating ( $b = .003$ ,  $p > 0.05$ ), the variable was found not to be statistically significant. However, variables that are found to be statistically significant include Algebra EOC pass percentages ( $b = .388$ ,  $p < 0.01$ ), SES % ( $b = -$

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.418,  $p < 0.01$ ), and interestingly, unemployment rate percentages ( $b = .354$ ,  $p < 0.001$ ) (see Table 4.8).

Table 4.8

*Multiple Regression Analysis of School Achievement, School Characteristics, and Community Characteristics*

	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
Constant	74.3	12.275		6.058	.000		
Climate	.005	.129	.003	.035	.972	.483	2.071
Alg EOC	.137	.040	.388	3.391	**.001	.341	2.936
SES %	-.104	.031	-.418	-3.329	**.001	.284	3.526
SWD %	-.204	.203	-.074	-1.005	.317	.822	1.217
ESOL %	-.362	.244	-.116	-1.481	.141	.725	1.379
Location	.414	.844	.046	.490	.625	.497	2.014
School Size	-.001	.001	-.147	-1.555	.123	.501	1.997
Crime Rate	-.339	.486	-.066	-.697	.487	.499	2.003
Unemploy.	2.89	.755	.354	3.830	**.000	.523	1.912

Note. a. Dependent Variable: Graduation Rate.

\*Regression coefficient significant at the 0.01 level (2-tailed)

\*\*Regression coefficient significant at the 0.001 level (2-tailed).

When reviewing the slope of the significant variables in the regression analysis, one variable was negative and two were directionally positive. The percentage of SES students had a negative slope, indicating that as graduation rates increase the percentage of SES students decrease in high school. In contrast, the positive slope of the pass percentages for Algebra EOC scores indicated that as test scores increase, graduation rates increased as well. Interestingly, the

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regression analysis also indicates that as unemployment rates increased, graduation rates increased (see Table 4.8).

Due to the fact that there was multi-level data in the analysis, to account for county level variables (i.e., crime rate percentages and unemployment rate percentages) a Hierarchical Linear Model (HLM) was employed. The analysis concluded that the outcomes were essentially the same as the OLS multiple regression model (Climate ( $b = .040$ ,  $p = .746$ ); Algebra EOC ( $b = .132$ ,  $p = .001$ ); SES ( $b = -.101$ ,  $p = .001$ ); and Unemployment rate ( $b = 2.912$ ,  $p = .000$ ). As such, for parsimony, the OLS multiple regression model was chosen for analysis and interpretation purposes.

As a result of the regression analysis, the following hypothesis must be accepted as stated:

H<sub>0</sub>: There is no significant relationship between public high school climate ratings (independent) and graduation rates (dependent) in the state of Georgia when potential covariates have been controlled.

### Chapter V

#### Findings, Discussion, Implications, and Limitations

Graduating from high school is one of the most important decisions an individual can make. As previously discussed in this study, dropping out of high school has an adverse effect, not only for the individual student but also for the economy. In fact, Stanard (2003) reported that 52% of welfare recipients, 82% of the prison population, and 85% of the juvenile justice cases were comprised of high school dropouts. Hence, there is a need for leaders in education to continuously study the factors that influence an individual's decision to complete high school.

Hammond et al. (2007) reviewed and narrowed the literature to forty-four citations that met the criteria to analyze risk factors contributing to high school dropouts. These researchers found that dropping out of school is related to a variety of influences that can be classified in four major categories including 1) individual, 2) family SES, 3) school, and 4) community factors. As such, educational leaders must focus on alterable variables within the school that may guide a student's decision to complete high school, including the school's climate.

Educational researchers make distinctions between school climate and culture. According to Eller and Eller (2009), school climate is the everyday feel within a school, while culture is embedded as the foundation. For that reason, the climate is often viewed as the behavior, while culture is comprised of the norms of the school (Hoy, 1990). In this respect, school climate (i.e., the way people feel about their school) is dependent on the values and behaviors of those in the school (i.e., culture). Thus, school climate is defined by the stakeholder's perceived beliefs about their respective school in reference to the quality and character of school life, influenced by the norms, goals, values, interpersonal relationships, instructional practices, and organizational structures within the school (Smith, 2018).

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Wang and Degol (2016) identified four constructs of school climate including academic, community (relationships), safety, and institutional environment components. Their research served as a guide when investigating factors that influence the school's environment. These constructs are developed within the school's environment and include multiple variables that influence a school's climate. The academic component of school climate is distinguished by three sub-categories, including school leadership, teaching and learning, and professional development. Community, or relationships, refers to the quality of interaction and partnerships between the members of the school, families, and other stakeholders (Epstein et al., 1997). This component can be sub-divided by the quality of interpersonal relationships, connectedness, respect for diversity, and community partnerships. Three dimensions of the safety component include physical, emotional, and order and discipline domains. Lastly, the institutional environment component of school climate includes an adequate school setting, maintenance and infrastructure, and accessibility and allocation of resources.

Similar to Wang and Degol (2016), Tagiuri and Litwin (1968) explained organizational climate by describing four fundamental elements which included ecology, milieu, social systems, and culture. In his explanation, Tagiuri categorized the components of each element. *Ecology* consists of buildings, grounds, classrooms, facilities, safety, and other resources. *Milieu* is composed of the organizational personnel such as the principal, teacher, students, parents, and other members of the school. *Social systems* are comprised of the shared connections and relationships of the school faculty and students, and the communication with parents and community. *Culture* is again described as the norms, values, beliefs, and customs which develop the identity of the organization (Ali & Siddiqui, 2016).



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To build a foundation and further understand human behavior and the role of the environment, this study utilized the following theories: 1) Ecological Systems Theory (Bronfenbrenner, 1979), 2) Social Learning Theory (Bandura, 1977a), and 3) Social Capital Theory (Bourdieu, 1986; Coleman, 1988a; Putnam, 1995). Each of these human and social relations theories are intertwined and provided guidance to explore why people react the way they do in their social, home, and school environments. These existing theories served as a theoretical framework for this study and assisted in providing an understanding of social interactions, norms, and relationships that exist within a school setting.

Bronfenbrenner's Ecological Systems Theory (1979) helped explain why individuals behave differently when comparing their behavior in the presence of their family as well as their behaviors when they are in a school or work environment. Bandura's Social Learning Theory (1977) indicated that people learn from one another by observation, imitation, and modeling. Social Capital Theorists, Bourdieu (1986), Coleman (1988a) and Putnam (1995), referred to social structures related to trust, norms, and networks that organize and facilitate cooperation for mutual benefit and common purpose. A school's environment, be it negative or positive, can be associated with each of the social relations theories. The following section will provide a brief description of each theory and its role in this study.

Further review of the literature exposed other variables that should be taken into consideration when investigating influences that impact high school graduation rates. These factors included: a) student achievement in ELA and math (Bowers et al., 2013; National Center for Education Statistics, 1992), b) student socioeconomic status (Coalition for Juvenile Justice, 2001; Hammond et al., 2007; Kaufman, 2002), c) student population size (Alspaugh, 1998; Byrk & Thum, 1989; McNeal, 1995), d) race/ethnicity (Battin-Pearson et al., 2000; Griffin, 2002;

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National Center for Education Statistics, 1992), e) special education population (Suh & Suh, 2007), f) location (i.e., rural, suburban, urban) (National Center for Education Statistics, 1992; Smink & Schargel 2004), g) community crime rate (Alspaugh, 1998; Wilson, 1996), and h) community unemployment rate (Christle et al., 2007; Wilson, 1996).

Stated in previous chapters, researchers have studied the correlation between school climate and student achievement (Ali & Siddiqui, 2016; Wang & Degol, 2016); however, analyzing the connection between the high school's climate and graduation rate, negatively or positively, when controlling for the variables mentioned above had not been thoroughly studied. The outcome of this study was important because research suggests that out of all the variables influencing a student's decision to remain in school, the climate is one variable that can be influenced by school leaders (Waters, Marzano, & McNulty, 2004). If a school's climate statistically correlated with its graduation rate, future Georgia school leaders may consider innovative ways to shape and influence their environments by including climate initiatives.

### **Findings**

The purpose of this study was to contribute to the body of literature regarding decisions school leaders make when developing strategic plans to improve student outcomes. This study investigated whether there was a significant relationship between school climate and graduation rates for public high schools in the state of Georgia when controlling for potential covariates. The data obtained in this study was analyzed using an ordinary least squares (OLS) multiple regression procedure with a simultaneous order of entry for variables. The analysis was conducted using the latest version of SPSS and Microsoft Office Excel. The following question was developed to shape this study:

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### Quantitative Research Question and Null Hypothesis:

1. Is there a relationship between school climate and graduation rates for public high schools in the state of Georgia when potential covariates have been controlled?

H<sub>0</sub>: There is no significant relationship between public high school climate ratings (independent) and graduation rates (dependent) in the state of Georgia when potential covariates have been controlled.

The minimum level of statistical significance was determined at  $p < 0.05$ . Using a variety of control variables, the multiple regression formula provided the variance associated with all variables and built a stronger argument for any significant relationship between the dependent and independent variable.

Table 5.1

#### *Factors Entered into the Regression Equation*

Variable Type	Characteristic	Regression Variable
School Related	Climate	School level raw score
	Algebra EOC	Minimum proficiency
	SES %	School level population
	SWD %	School level population
	ESOL %	School level population
Community Related	Location	Rural, Suburban, Urban
	School Size	School level student FTE
	Crime Rate	County-level percentage
	Unemployment Rate	County-level percentage

Note. Variance Inflation Factor (VIF) of less than 3.0 utilized to avoid multi-collinearity. The variables 9<sup>th</sup> Grade Literature EOC and White % were removed before conducting the regression analysis due to collinear relationships with other covariates.

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For  $H_0$ , the effect of the regression analysis when including the independent variable, school climate, ( $b = .003, p > 0.05$ ), was found not to be statistically significant. However, variables that were found to be statistically significant included Algebra EOC pass percentages ( $b = .388, p < 0.01$ ), SES % ( $b = -.418, p < 0.01$ ), and interestingly, unemployment rate % ( $b = .354, p < 0.001$ ).

### Discussion

Previously explained in Chapter 4, an accepted variance inflation factor (VIF) of less than 3.0 was used to avoid multi-collinearity. Variables that exceeded the VIF of 3.0 were removed or strategically left in the analysis based on empirical recommendations. As such, 9<sup>th</sup> Grade Literature EOC and white student population percentages were removed (see Table 4.6 and Table 4.8). With the exception of 9<sup>th</sup> Grade Literature EOC and white student population percentages, the remaining variables were entered simultaneously in the regression equation model. When all covariates and the dependent variable were introduced into the regression equation, roughly 49 percent ( $R^2 = .487$ ) of variance associated with graduations rates was accounted (see Table 4.7). When determining the impact of the individual variables on the dependent variable (i.e., graduation rates), the effect of the regression analysis revealed the independent variable (i.e., school climate rating) was not statistically significant (see Table 4.8).

To further discuss the study's results, the finding of the multiple regression analysis and the correlation matrix of all variable will be used. Although school climate was found to not have a statistically significant relationship with graduation rates within the regression analysis, the correlation coefficient in the correlation matrix describing the two was positive ( $r = .373, p < 0.01$ ; see Table 4.5) and the regression coefficient in the regression analysis was also positive ( $b = .003$ ). Additionally, the correlation matrix indicated that school climate positively correlated

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with 9<sup>th</sup> Grade Literature EOC pass percentages ( $r = .639, p < 0.01$ ; see Table 4.5) and Algebra EOC pass percentages ( $r = .655, p < 0.01$ ; see Table 4.5). The results of multiple regression analysis suggested that with roughly 51% of the variance associated with high school graduation unaccounted for, the variables included as statistical controls are not the only factors that influence a student's opportunity to graduate from high school. To account for more variance, future researchers should include additional factors that influence high school graduation rates not included in this model. Ultimately, future research that contains additional factors could potentially change the statistical significance between the independent and dependent variables in this study.

Unemployment rate percent was one of three variables found to have a statistically significant relationship ( $b = .354, p < 0.001$ ) with the dependent variable, graduation rates. Considering the percentage of disadvantaged students in a high school was found to positively correlate with community unemployment rates ( $r = .555, p < 0.01$ ), previous research does not support this statistical significance finding. In fact, in a study spanning almost three decades, Kauffman (2002) found students that were considered in poverty were three to four times more likely to drop out of high school. Additionally, Woods (1995) reported that poverty was the strongest, non-school related predictor of dropping out of high school. Further, Wilson (1996) believed that exposure to delinquent communities with high unemployment rates contributes to increased educational failures including dropping out of school. He argued that children who witness adults in a neighborhood with steady jobs help to promote behaviors and attitudes that contribute to achievement in school and successful graduation.

The second variable, socioeconomic status percent (SES), was also found to have a statistically significant relationship ( $b = -.418, p < 0.001$ ) with the dependent variable, graduation

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rates, which aligned with previous research and literature. Socioeconomic status, a family-related characteristic, has been identified as a highly predictive variable for detecting potential high school dropouts. In a review of over 3400 pieces of literature, Hammond et al. (2007) determined that 83% of the research-based studies identified low economic status as a significant contributor for predicting high school dropouts, which further validates this finding. In the same year, Christle et al. (2007), purported consistencies in the types of students who drop out of high school. According to the researchers, SES endures a strong connection to dropping out of school, with students from low-income families being 2.4 times more likely to leave high school than middle-income families.

Algebra EOC pass percentage was the third variable found to have a statistically significant relationship ( $b = .388, p < 0.001$ ) with the dependent variable, graduation rates. The positive slope of the pass percentages for Algebra EOC scores indicated that as test scores increase, graduation rates increased as well. Also, the correlation matrix indicated that school climate positively correlated with Algebra EOC pass percentages ( $r = .655, p < 0.01$ ; see Table 4.5). This finding further supports previous researchers that have concluded low academic performance as one of the strongest predictors of dropping out of high school (Baker et al., 2001; Battin-Pearson et al., 2000; Cairns et al., 1989; Hammond et al., 2007). Also, Slavin et al. (1989), found that failing test scores and failing grades, which caused students to be retained, made up 90% of the dropouts in their study.

The independent variable, school climate ( $b = .003, p > 0.05$ ), was found not to be statistically significant with graduation rates. However, of the three variables that were found to have a statistically significant relationship with graduation rates, Algebra EOC pass percentage, which positively correlated with school climate rates ( $r = .655, p < 0.01$ ; see Table 4.5), is the

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one factor that is alterable for school leaders. As it relates to the four constructs of school climate (academic, community, safety, and institutional environment), academic climate is perhaps the most important domain of school climate, according to Thapa et al. (2013). To further support this statement, Stefanou et al. (2004) found that teaching and learning, a sub-category of academic climate, has a direct impact on a students' learning experience and achievement scores. These findings affirm that school leaders, who wish to transform the school's culture and increase academic performance, which may indirectly impact graduation rates, should focus on the instruction and delivery of math within the school, specifically focusing on low SES students.

The social relations theories discussed in this paper support the findings in this study. Bronfenbrenner's ecological theory considers the entire ecological system and views all variables within the functional system of a school as instrumental components of organizational success that have the potential to influence student outcomes (Anderson, 1982; La Salle, 2013). Bronfenbrenner explained the chronosystem, which was utilized in Elder's (1974) study of children in the Great Depression. Elder's research suggested that deprived and developing children displayed a greater desire to achieve, which may help explain the positive correlation and statistically significant relationship found between graduation and unemployment rates.

Using Bandura's Social Learning Theory, one can rationalize why a positive school environment, developed through positive influence may result in a school climate that provides opportunities for students to succeed in high volumes. However, self-efficacy, defined by Bandura (1977b), as one's belief in one's ability to succeed in specific situations or accomplish a task, may offer an understanding to explain why low SES students have more difficulty with successfully graduating from high school. If a school allows itself to be defined by a high

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percentage of low SES negatively, low levels of self-efficacy are likely to set in and cease individual student efforts to commit to goals and graduate from high school.

Previously discussed in chapter 2, Coleman (1988a) is most responsible for connecting social capital theory and its application to the potential influence it has on the school's environment and its success. His research associates components of social capital that provide insight to strategies when considering a school's environment, which may increase student achievement and graduation rates (Bryk & Thum, 1989; Israel & Beaulieu, 2004). In a school setting where high levels of trust are recognized by the individuals within the network, support and positive interactions are established (Israel, Beaulieu, & Hartless, 2009). An abundance of social capital within the school and community may explain the positive correlation between a school's climate and graduation ratings.

### **Implications**

When controlling for school and county covariates, school climate was found not to statistically influence graduation rates. However, practical significance should be noted considering the directionality of the regression coefficient for school climate was positive ( $b = .003$ ), indicating school climate had a positive relationship with the dependent variable. And, while this finding may be due to chance, school leaders should continue to make efforts to improve school climate for its potential to impact student outcomes (i.e., graduation) positively.

This study identified academics (i.e., math) and socioeconomic variables that significantly influence graduation rates. It is recommended that specific efforts be made to continue targeting these variables considering their effect on graduation outcomes. These findings support a plethora of literature and research discussed in chapter two that addresses academic achievement and SES as indicators of high school graduation (Baker et al., 2001;



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Christle et al., 2007; Hammond et al., 2007; Kauffman, 2002; National Center for Education Statistics, 1992).

With consideration to the findings in this study, further research should be narrowed to focus on the impact school climate has on specific, individual student characteristics such as the socioeconomic status and academic achievement. If the school's climate significantly influences academic achievement for socioeconomically challenged students, it may indirectly impact graduation rates.

### **Limitations**

As with all studies, the findings should be interpreted through the lens of the studies limitations. Factors did exist that limit the generalizability of the findings from this study. While the power analysis conducted identified 122 high schools in Georgia as an adequate sample size, collecting data from all high schools may have afforded more assurance that all variables were sufficiently represented. Also, including representation from public high schools in other states may prevent the findings from being only generalizable to Georgia.

The surveys utilized in this study that determine a school's Star Climate Rating in Georgia have limitations as well. For instance, the Georgia Student Health Survey 2.0 (GSHS 2.0) is exhausting in length. Students were required to complete the 122 question survey without much guidance, benefit, or extrinsic reward to the individual. The survey was controlled by the individual school, which can manipulate the timing of the survey and which students actual completes the survey by adhering to the rule that 75% of each grade level must participate. The parent survey, Georgia Parent Survey (GPS), was open to anyone that logged into the survey site. This means that anyone in the world could have participated and impacted the climate score for any school. Also, a minimum participation rate was not required for the GPS. Schools that have

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no participation were penalized and designated as No Participation (NP) with a 0 domain score. Schools with less than 15 parent surveys were not penalized but were designated as Insufficient Participation (IP), and the responses were not included in the average for the survey domain of the climate rating.

Other limitations in this study include county-level data utilized to measure crime and unemployment percentages. In addition to introducing multilevel variables (i.e., school and county), the percentage range for each was minimal. Community crime rate had a range of 5.0 with a minimum of .10 percent and a maximum of 5.10 percent. Unemployment rates had a range of 3.90 with a minimum of 3.70 percent and a maximum of 7.60 percent. Introducing more community factors that are more specific to each of the schools, rather than county, could ultimately change the outcomes in the regression analysis.

### **Conclusion**

This current study makes an effort to provide further research and discovery of school climate and the role it plays regarding student outcomes. In line with previous research, this analysis determined a positive correlation between a school's climate and successful student achievements. This study also concluded a statistically significant correlation between student assessments (i.e., math EOC) and graduation rates. Therefore, a positive school climate may promote increased student achievement in math and inadvertently impact graduates rates for public high schools in Georgia. Educational leaders must continue efforts to plan initiative to promote school climate strategically. Also, leaders must consider climate perspectives from a variety of groups which include students, teachers, administrators, parents, and other community members. This study, as well as previous literature on school climate and culture, promotes the concept that positively manipulating the school's environment (i.e., climate) may increase

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student achievement in math which significantly influenced graduation rates, therefore creating constructive outcomes for the individual student and society as a whole.

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